JPRS 74971

21 January 1980

China Report

AGRICULTURE

No. 66

FBIS FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Indexes to this report (by keyword, author, personal names, title and series) are available from Bell & Howell, Old Mansfield Road, Wooster, Ohio 44691.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

50272-101

REPORT DOCUMENTATION PAGE	1. REPORT NO. JPRS 74971	2.	3. Recipient's Accession No.
4. Title and Subtitle CHINA REPORT: AGRICULTURE, No. 66			5. Report Date 21 January 1980
			6.
7. Author(s)			8. Performing Organization Rept. No.
9. Performing Organization Name and Address Joint Publications Research Service 1000 North Glebe Road Arlington, Virginia 22201			10. Project/Task/Work Unit No.
			11. Contract(C) or Grant(G) No. (C) (G)
12. Sponsoring Organization Name and Address As above			13. Type of Report & Period Covered
			14.
15. Supplementary Notes			

16. Abstract (Limit: 200 words)

This serial report contains information on agricultural activities in China.

17. Document Analysis a. Descriptors

CHINA
Agriculture
Weather
Statistics
Crops
Animal Husbandry
Forestry
Soil
Pisciculture

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group 2

18. Availability Statement Unlimited Availability Sold by NTIS Springfield, Virginia 22161	19. Security Class (This Report) UNCLASSIFIED	21. No. of Pages 92
	20. Security Class (This Page) UNCLASSIFIED	22. Price

(See ANSI-Z39.18)

OPTIONAL FORM 272 (4-77)
(Formerly NTIS-35)
Department of Commerce

JPRS 74971

21 January 1980

CHINA REPORT

AGRICULTURE

No. 66

CONTENTS

PAGE

I. GENERAL INFORMATION... 1

National

Economic Journal Discusses Agricultural Modernization
(Zhan Wu; JINGJI GUANLI, 25 Sep, 25 Oct 79)............. 1

Part I
Part II

Cost of Mechanization Estimated
(Wang Mengkui; GUANGMING RIBAO, 19 Aug 79)............... 26

Use of Water Turbines in Irrigation Developed
(XINHUA, 29 Dec 79)...................................... 28

'Radio Beijing' Interviews Weather Bureau Official
(Zou Jingmeng Interview; Beijing Domestic Service, 26 Dec 79)... 29

Agronomists Exchange Views at Tea Party
(XINHUA, 28 Dec 79)...................................... 31

Briefs
Green Manure Class 32
Meeting on Reservoir Usage 32
Rural Housing Conference 32
Jute Procurement 32
Agricultural Economics Symposium 33
Harvester Designer 33
Pumping Complexes Operational 33

CONTENTS (Continued) Page

Anhui

Briefs

Anhui Prefecture Bumper Harvest 34
Anhui Country Grain Output 34
Anhui Farmland Improvement 34

Beijing

Briefs

Consumer Products Record Purchase 35

Fujian

Briefs

Fujian Timber 36
Fujian Prefecture Grain Procurement 36

Gansu

Briefs

Gansu Forestry 37

Guangdong

Procurement Prices of Major Agricultural Byproducts Raised
(TA KUNG BAO, 27 Oct 79)................................ 38

Briefs

Hainan Tropical Crops 40

Guizhou

'GUIZHOU RIBAO' Urges Laying Solid Foundation for Agriculture
(Editorial; Guizhou Provincial Service, 22 Dec 79).... 41

Hebei

Unusually Cold Weather Hits Peking Area
(TA KUNG BAO, 18 Nov 79)............................... 42

Hebei Meeting Discusses Drought Situation
(Hebei Provincial Service, 18 Dec 79)................. 43

CONTENTS (Continued) Page

Record Yield Expected in Tianjin Municipality
(Xiao Di, Chen Zhonghuai; TIANJIN RIBAO, 22 Sep 79)... 45

Briefs

Winter Afforestation 47

Heilongjiang

Mechanization Lifts Peasants' Income
(XINHUA, 24 Dec 79).................................... 48

Farmers Income, Buying Power Increasing
(Sun Minghui, et al.; TA KUNG BAO, 18 Nov 79)......... 50

Briefs

Heilongjiang Frozen Pork 52
Sugar Production 52
Prefecture Sells More Hogs 52

Henan

Henan Issues Circular on Promoting Yearend Distribution
(Henan Provincial Service, 21 Dec 79)................. 53

Briefs

Henan Prefecture Agriculture Shortcomings 56
Henan Country Production 56
Henan Prefecture Chemical Fertilizer 56

Hubei

Briefs

Hubei County Agriculture 57
Hubei County Cotton, Grain 57
Hubei County Cotton 57
Hubei County Grain 57
Oil-Bearing Crops 57

Hunan

CCPCC Commends County in Hunan for Educational Work
(XINHUA, 28 Dec 79).................................... 58

Briefs

Hunan Ramie 60

CONTENTS (Continued) Page

Jiangsu

Briefs

Jiangsu Field Management 61
Agricultural Loans 61
Top Grain-Producer 61
Jiangsu County Replants Seedlings 62

Jiangxi

Briefs

Jiangxi County Rice 63

Jilin

Briefs

Agricultural Production 64

Liaoning

Briefs

Electric Sprinkler 65
Commune Income 65
Agricultural Science Forum 65

Nei Monggol

Readjustment Improves Chemical Fertilizer Plant
(NEI MONGGOL RIBAO, 4 Oct 79)........................ 66

Production Increased
Cost Decreased

First Class of Agricultural, Animal Husbandry School Concluded
(NEI MONGGOL RIBAO, 5 Oct 79)........................ 69

Briefs

Nei Monggol Livestock Centers 71
Sugarbeet Production 71

Ningxia

Briefs

Ningxia Country Animal Husbandry 72

CONTENTS (Continued) Page

Qinghai

Briefs

Animal Husbandry Societies 73
Qinghai Improved Livestock 73

Shaanxi

Briefs

Dali County Cotton Production 74

Shandong

Briefs

Irrigation Project 75
Fruit Harvest 75
Farmland Capital Construction 75

Shanghai

Briefs

Shanghai Reduces Fish Price 76
Agricultural Forum 76
Cotton Production 76
Animal Husbandry Meeting 76

Sichuan

Briefs

Sichuan Country Producement 77
Farmland Capital Construction 77

Xinjiang

Briefs

Making Wasteland Productive 78
Agriculture, Forestry Successes 78
Xinjiang Youth Harvests 79

Xizang

Briefs

Xizang Country Animal Husbandry 80

CONTENTS (Continued) Page

Zhejiang

Briefs

Zhejiang County Cotton Output 81
Farmland Improvement 81
Cotton Production 81
Zhejiang Cotton Procurement 81
Zhejiang Farm Machinery 81

II. PUBLICATIONS... 82

Table of Contents of 'CHINESE JOURNAL OF ZOOLOGY', August 1979
(DONGWUZUE ZAZHI, Aug 79)............................ 82

Briefs

Livestock Disease Book 86

I. GENERAL INFORMATION

ECONOMIC JOURNAL DISCUSSES AGRICULTURAL MODERNIZATION

Part I

HK241500 Beijing JINGJI GUANLI in Chinese No 9, 25 Sep 79 pp 11-17 HK

[Article by Zhan Wu [6124 2976] of the Institute of Agricultural Economics: "Follow the Chinese Road to Agricultural Modernization"--sections within slantlines denote boldface type]

[Text] Leading comrades of the party Central Committee have pointed out that modernization must be carried out according to the situation in China and must follow the Chinese road. This directive shows a further combination of Marxism-Leninism with the reality of China's four modernizations. It is of great practical and historical significance for the whole party and the whole people to raise their consciousness in carrying out modernization and in stepping up the process of the four modernizations. It is an extremely important question for those within the party who carry out actual work and for theoretical workers. Modernization in agriculture is the base of the four modernizations. How can agricultural modernization better suit the characteristic features of the country? What is the Chinese road to agricultural modernization? What are the contents, particular features and regularity of this road? I am going to express my views on these questions.

I. Basic Features That Must Be Considered in Modernizing Agriculture

In modernizing agriculture we must proceed from actual situation and characteristic features of China. The basic features that are closely related to modernizing agriculture of our country can be summarized at the following three points:

/1. The Socialist Ownership of Agriculture./ According to China's social system, we are carrying out socialist and not capitalist agricultural modernization. As early as the 1950's, we had completed the socialist transformation of agriculture under the leadership of the party and established two types of socialist ownership, that is the ownership by the whole people and collective ownership. Under the socialist system, our agriculture can, just like the whole national economy, develop rapidly, systematically and proportionately. Socialist agriculture is much more superior than capitalist agriculture in the rational utilization of resources, in controlling the size of operations, in coordination of farm capital construction, in working up production and construction plans, in deciding appropriate management system and in developing science, technology and culture. For example, during the 1st 5-Year plan, our agriculture had developed stably and rapidly, with increases being registered in the agricultural means of production, farm output and peasant incomes. In 1957 the number of farm machines increased 19 fold, the use of chemical fertilizer 5 fold and gross farm output 24.7 percent over 1952. During this period gross farm output on the average increased almost 5 percent annually, and peasant income by 27.9 percent, with an annual average increase of 5.6 percent. Thus, the superiority of socialism began to manifest itself during this period. Another example is that we have a number of well-managed production brigades which have initially established mechanization, building up complete irrigation schemes and universal application of chemical fertilizer and used good seed strains to considerably increase production and living standards. Per mu output ranges from over 1,000 jin to over a ton. The living standard of the peasants of these production brigades have reached or surpassed those of workers in towns. This is another example of the superiority of socialism. Over the past 30 years since the founding of New China, our agriculture has declined on two occasions and risen again twice, just like the situations experienced by the whole national economy. Our agriculture and economy were once on the brink of collapse after 10 years of sabotages by Lin Biao and the "gang of four." This experience shows that the superiority of socialism relies on the correct apprehension and use of the law of socialist economy. This superiority finds expression in correct line, policy, principle and style of work. It will manifest itself in places where objective economic laws are respected to a greater degree and where the party's line, policies and principles are implemented and where there is a good style of work. Thus, our agriculture and economy have been developing fairly stably and rapidly in these places. Otherwise, there will be no expression of this superiority and our agriculture and economy will vacillate, stagnate or even retrogress.

/2. Vast Territory With Rich Resources and Huge Population but With Limited Cultivated Land and Areas Much Different From Each Other in Natural Environment./ Our country has a vast land, limited cultivated areas and a huge population. The average farmland per capita is 1.6 mu, only equal to one-eighth of the United States, one-seventh of the Soviet Union, one-third of France, two-fifths of India and two-sevenths of the world's average. China has several hundred millions mu of arable land, but with an increasing population and more land being used for capital construction, the situation in which the population far exceeds cultivated areas will not change much. Eventually, the key point in developing our agricultural production is to raise per unit yield. On the other hand, our country abounds in natural resources that have not been fully tapped. The acreage of our grassland comes to 4.3 billion mu, but the produce of animal husbandry only makes up 13.9 percent of the total farm output. [HK241505] We have 3.8 billion mu of forestry and barren hills and lands that are suitable for developing forestry and animal husbandry, but the present forestry coverage rate is as low as 12.7 percent. We have 800,000 square km of sea acreage and over 75 million mu of fresh water acreage, but their utility rates are only one-seventh and one-half respectively. This situation means that to feed such a huge population, we must develop agriculture in the all-round way that includes farming, forestry, animal husbandry, sideline productions and fisheries and resort to multiple operations.

Areas throughout the country are much different from each other. There are vast areas in the northeast and northwest but with little population while most areas in other parts of the country are limited and more heavily populated. Coastal areas, inland areas, border regions, plains, hilly areas, areas crisscrossed by rivers and the Louess Plateau are different from each other with their own characteristic features. They have much different soils, plants, climates and rainfalls. Therefore, agricultural modernization must be carried out according to the specific condition of each area.

/3. Initial Foundation Has Been Set Up After 30 Years of Construction, but the Levels of Industrial and Agricultural Production, Science and Culture Are Still Low, Particularly in Management; With Little Funds Accumulated and Weak Foundation, Their Developments Are Very Unequal./ Socialism should be a product of highly developed capitalism. But because of our economic situation, we are building socialism on a foundation predominated by backward and small-scale agricultural economy. Some advanced countries in the world modernized their agriculture after they had modernized their industry. In these countries, modern industrial cities have drawn enormous labor power from rural areas, accumulated capital enormously and turned out high quality industrial products that are marketed in rural areas at low prices. Although China has set up an industrial foundation on a small scale after 30 years of construction, our industrial level is still very low, our technological power is far from enough, our funds accumulation is low and the foundation of our country is still weak. So our country is not in a position to provide agricultural modernization with high quality and cheap industrial products. On the contrary, our industrial products are of secondary quality with high prices, not in complete sets and lacking spare parts. All this has seriously affected agriculture. Our country is also not in a position to provide enough funds for agricultural modernization. The funds needed must, therefore, be mainly accumulated by people's communes, production brigades and state-owned enterprises. It is also impossible for our country to draw enormous labor power from rural areas for urban industries. Arrangements must be made locally to make use of labor power in rural areas that are emancipated by farming modernization. In addition, some young people in urban areas must go to rural areas to take part in production. The task facing our agricultural modernization is how to accumulate funds and make use of surplus labor power. Over the past 30 years, our agriculture has been equipped with some modern and semimodern industrial equipment and the means of production. The acreage of cultivated land with stable and high yields is two-thirds of the total farm land, with output much higher than the early days of liberation. But the levels of mechanization of production remain low as a whole. Farm works in most areas is done mainly by hand. Most of these areas are low-yielding and vulnerable to natural calamities. Subsistence of the people as well as their animals in these areas depends basically on mother nature alone. Most production brigades have very little accumulated funds. They still rely heavily on natural economy. Thus, with agricultural commodities, grain and raw materials in short supply, the living standards of most peasants in these areas are very low.

In short, there are three apparent advantages for modernization of our agriculture: 1) the superiority of the socialist system; 2) enormous labor resources in rural areas and their creativity, and 3) rich natural resources for agriculture, forestry, animal husbandry and sideline production. But there also exist three apparent contradictions and difficulties: 1) How to greatly improve the living standards of a billion people by providing them with ample food, clothing and living quarters while cultivated land is limited and production is low; 2) How to solve the problems of accumulating funds as both the state and the collectives are poor while enormous investments are needed for modernizing agriculture, industry, defense and science and while the people's livelihood have to be improved, and 3) Modernization will drastically cut the number of people engaged in production while there are enormous labor resources both in rural and urban areas. How then can this contradiction be settled? In short, how to make use of our advantages and overcome difficulties are problems that have to be tackled in making our agriculture take the Chinese road to modernization.

II. Basic Demands for Agriculture Modernization

According to the above-mentioned characteristic features, in modernization of our agriculture (including farming, forestry, animal husbandry and sideline production), systematic measures must be taken to mechanize the means of production. [HK241510] They include mechanization, electrification, chemical fertilization, scientific production technologies and modernization in production conditions such as irrigation and meticulous "garden cultivation" of fields, specialization, regionalization and socialization of production organization and enterprise-type management. Our goal is to drastically increase per unit yield, total output, labor productivity and commodities and increase per capita shares of gross agricultural output and income to enable the output of agriculture, forestry, animal husbandry, sideline production and fisheries to reach advanced world levels this century, meet to a greater extent the increasing demands of the whole society, increase material and cultural living standards of the people and narrow down or even eliminate the difference between town and country.

The six aspects for modernizing agriculture mentioned above are not our goals but our means. Our goal is to produce an abundance of farm products and greatly increase the people's living standards. We are sure to reach this goal this century as long as we fully display the above-mentioned three advantages. The degree of agricultural modernization is not merely judged by the extent of technology and equipment used. More important are the economic results of this advanced technology and equipment, the amount of the products shared by the whole people, their net income and their material and cultural living standards.

Because most areas in our country are populous but have limited cultivated land, therefore work must be done simultaneously in increasing per unit yield, total output and labor productivity. For most areas, efforts must be made to increase per unit yield and, on this basis, increase labor productivity.

Natural economy is predominant in our country while commodity economy is far from being advanced. Grain commodity rate is less than 20 percent, which is far lagging behind advanced countries (the U.S. grain commodity rate is 99 percent). Therefore a major task in modernizing our agriculture is to increase commodity rate.

III. The Road to Modernizing China's Agriculture

According to the characteristic features of our country, to the trends of advanced countries to modernize agriculture and to our rich negative and positive experience over the past 30 years, the modernization of our agriculture must take the road of simultaneously developing agriculture, forestry, animal husbandry, sideline production and fisheries, of comprehensively developing agriculture, industry and trade in a systematic, proportionate and coordinated way and with emphasis on the key aspects.

/First, Take the Road of Simultaneous Development in Agriculture, Forestry, Animal Husbandry, Sideline Production and Fisheries and Comprehensive Development in Agriculture, Industry and Trade./

As pointed out above, China already has a number of production brigades with initial mechanization, chemical fertilization, extensive water conservancy facilities and good strains of seeds. The production levels and living standards of these production brigades are quite high. How have these brigades developed then? Apart from good leading groups and good style of work, these production brigades have implemented various policies of the party, particularly the policy of "each according to his work." Viewed from their economic structure, these production brigades have simultaneously developed agriculture, forestry, animal husbandry, sideline production and fisheries and comprehensively developed agriculture, industry and trade. Although some started from plantations, most began with industry and sideline production or diversified their economy by operating forestry, animal husbandry and fisheries. With funds accumulated, they began to purchase machinery and chemical fertilizer and carried out farm capital construction. Thus improvement in agriculture is followed by improvement in living conditions of commune members. Living conditions of some commune members have caught up with or even surpassed that of workers living in towns. Each province, municipality and autonomous region has a number of these "aces" of production brigades. In 1978, 3.8 percent of these production brigades recorded an average distribution of over 151 yuan per capita. Of course, the levels of production and modernization and the living standards of the peasants in these production brigades are still low and lag far behind those of advanced countries. Anyhow, it is a new and emerging situation. These production brigades have taken the road to modernization through simultaneous development of agriculture, forestry, animal husbandry, sideline production and fisheries and comprehensive development of agriculture, industry and trade. It is in this way that under the leadership of the party, the broad masses of the peasants have pioneered the Chinese road to modernization.

Only by developing agriculture, forestry, animal husbandry, sideline production and fisheries simultaneously and developing agriculture, industry and trade in a comprehensive way can we fully display the three advantages and solve the three problems in modernizing agriculture with better result.

/Only by Simultaneously Developing Agriculture, Forestry, Animal Husbandry, Sideline Production and Fisheries and Comprehensively Developing Agriculture, Industry and Trade Can We Solve the Problems of Funds Accumulation With Faster and Better Results./ [HK241515] Under the present situation in which farm produce prices are relatively low and the income of the peasants meager, the funds accumulations capacity of people's communes, production brigades and state farms will remain too low if they just rely on plantations and producing grain only. For example, per mu cultivated land of Luanzheng County in Hebei Province can accumulate only 5 to 6 yuan annually, but the capital needed for mechanizing per mu cultivated land comes to 200 yuan. Taoyuan County of Hunan Province is estimated to need 400 million yuan to modernize its agriculture, but the county's annual accumulation is only about 10 million yuan. This means that the county has to accumulate 40 years before it is able to modernize its agriculture. The only way to accumulate funds needed for agricultural mechanization and modernization is to simultaneously develop agriculture, forestry, animal husbandry, sideline production and fisheries and to comprehensively develop industry, agriculture and trade, particularly industry, sideline production and breeding industry that give quick returns with high profits and accumulations. Reference materials on some typical units show that a production brigade which has done a better job in agriculture, animal husbandry, forestry, sideline production and fisheries or in industry and sideline production is able to invest 40,000 to 50,000 yuan or even more than 200,000 yuan per year in mechanizing agriculture and in extensive water conservancy facilities. This production brigade has mechanized its agriculture and extensively set up water conservancy facilities in 8 to 10 years. Experience in many places has proven that the best way for some poor communes and production brigades is to help them carry out diversified economic activities and set up enterprises. The result of this method is better than just allocating them with investments. The masses said: "It is better for us to purchase machinery by relying on our sideline production than by relying on state capital."

/2. Only Through Simultaneous Development of Agriculture, Forestry, Animal Husbandry, Sideline Production and Fisheries and Comprehensive Development of Agriculture, Industry and Trade Can We Make Full Use of Labor Force Emancipated by Mechanization in Promoting Production./ Typical reference material shows that a production brigade can save about tow-thirds of its labor force after it has basically attained mechanization; that is it can cut its production force from 76 to 21.8 percent. The present agricultural labor force throughout the country is 300 million people, but with realization of mechanization, the labor force needed will be down to 30 million, which is only 10 percent of the total. Experience has again proven that the 90 percent surplus labor force can be fully arranged only by simultaneously developing agriculture, forestry, animal husbandry, sideline production and fisheries and comprehensively developing agriculture, industry and trade. The arrangement can be made basically in the following nine ways: 1) carry out intensive and meticulous farming, scientific farming and increasing per unit yield and total output; 2) carry out farm capital construction and opening up barren land; 3) undertake forestry and grass growing to expand covered areas; 4) develop cows, sheep, pigs, rabbits, chickens, ducks and geese raising; 5) undertake ocean and fresh water fish breeding; 6) undertake sideline production and transportation; 7) set up commune and production brigade enterprises; 8) set up enterprises that serve social production and consumers, and 9) carry out agricultural scientific research. With these arrangements, our economy will develop even faster and the road we are following will become wider and wider.

/3. Only Through Simultaneous Development of Agriculture, Forestry, Animal Husbandry, Sideline Production and Fisheries and Comprehensive Development of Agriculture, Industry and Trade Can We Change the Structure of Agriculture, Economy and the Structure in the Diet of the People, Effectively Solve the Problem of Feeding a Billion People, Increase the Income of the Peasants and Improve Their Living Conditions./ Our population will soon soar to a billion; feeding them will be a striking problem. The present per capita of coarse grain is only 600 jin. Even if our goal of producing a total of 800 billion jin is achieved by 1985, the per capita ratio on the average will be no more than 800 jin, which is still far behind the advanced countries. But if we are engaged in simultaneously developing agriculture, forestry, animal husbandry, sideline production and fisheries, particularly animal husbandry and fisheries, then we will be able, like those advanced countries, to change the structure of the agriculture economy and the structure of the people's diet by gradually increasing the ratio of fish, meat, edible oil, eggs, milk and fruits and decrease grain consumption. If the present per-capita grain consumption of over 400 jin annually is lowered to 200 jin, the situation of 800 jin grain per capita will produce different results. After the food consumption structure is changed, the people will have foods with higher quality and nutrition to the benefit of their health.

Simultaneous development of agriculture, forestry, animal husbandry, sideline production and fisheries and comprehensive development of agriculture, industry and trade are important in increasing the income of peasants. The peasants of some units with quite good achievements in running their industry and sideline production get the highest part of their income and profit distribution from these trades. [HK241520] Take the situation of the Qianzhou people's commune, Weixing production brigade and Yuechi No 1 production brigade of Wuxian County in Jiangsu Province for example. Gross industrial output value of these units in 1978 made up 60 to 74 percent of the gross farm output value, with 54 to 65 percent of the peasant distribution coming from industry. The scissors difference between industrial and agricultural products is not likely to be completely eliminated during a certain period of time;

because industry and sideline production usually have quicker returns and higher accumulation rates than plantations, the situation in which industry and sideline production that supports agriculture will continue to exist for quite a time. The tendency of comprehensive development of agriculture, industry and trade is more apparent in other countries with higher agricultural modernization. The number of specialized peasant households in Japan in 1976 was 50 percent less than 1967. The number of these households now only comprises 13.3 percent of the total peasant households while the other 86.7 percent are simultaneously engaged in industry. Of the total income of Japanese peasants, 31.8 percent comes from agriculture with the rest from industry and sideline production. In Yugoslavia, the number of peasant households simultaneously engaged in agriculture and industry has rapidly increased. Enterprises that combine agriculture, industry and trade have been developing rapidly in many East European countries. Experience has proven that agriculture will remain in a stage of supplying raw materials and will not be able to emancipate itself from this stage unless it undertakes industrial processing. There are many advantages in combining agriculture with industry and trade. First, through industrial processing cheap products of sideline production can be turned into high price commodities, thus greatly increasing income. Second, by combining production with processing and sales, a number of interval processes will be eliminated to cut down losses, transportation fees and costs. Third, as the supply of raw materials is linked with sales of products, production will be developed. Fourth, it is of benefit to narrow down the scissors difference between industrial and agricultural products, increase the income of the peasants and greatly improve their living conditions. To undertake agriculture and combine it with industry and trade will result in enormous increases in grain, cotton, raw materials for edible oil and sugar, animal husbandry products, marine products and forestry products, with the income of the peasants being drastically increased. Of course, the people's communes and production brigades must run enterprises and undertake diversified economic activities in a systematic and not haphazard way.

In addition, it is only by simultaneously developing agriculture, forestry, animal husbandry, sideline production and fisheries can we improve the natural conditions for the benefit of realizing agricultural modernization, thus insuring a rapid and persistent development of our agriculture. The first important natural condition is soil fertility. The fertility of our soil has been decreasing over the past few years. There are generally over 3 percent of organic elements in the soil of other countries, but the soil of our country contains only 1 to 2 percent of these organic elements. If we apply more fertilizer, the soil will easily harden. Once more fertilizer is applied, the excessive part of it will leak out and together with excessive poisonous pesticide elements will harm crops, marine products and people's health. The fundamental measure to improve soil fertility is to greatly develop animal husbandry in combination with agriculture to enable agricultural and animal husbandry products to make use of each other to the benefit of their development. Farm produce can be used as fodder while animal manure as organic fertilizer. Statistics show that animals can produce the following amount of manure per year: pigs 6,500 jin, cows 18,250 jin, horses 10,950 jin and sheep 1,460 jin. The 6,500 jin pig manure contains 26 jin of nitrogen, 14 jin of phosphorus and

53 jin of potassium. They can help increase grain output by 800 to 900 jin. That is why advanced world countries have higher proportions of animal husbandry than plantations. Animal husbandry provides meat, milk and eggs while animal manure provides organic fertilizer for plantations. In fact, many Western and European countries are paying more attention to the use of animal manure as fertilizer. France applies 157 jin of fertilizer per mu of farm land, with most of it being animal manure combined with chemical fertilizer. It is wrong to think that once farming is modernized, it is no longer necessary to apply organic fertilizer but chemical fertilizer.

Some other natural conditions are climate and precipitation. People have now come to realize that they can adjust rainfall and climate and that the basic way to do this is to plant forests and grow grass so as to rationally maintain certain plantation acreage. A country that has 30 percent forest areas spread out evenly can basically insure agriculture and forest production from serious drought and flood. Among such countries are Finland, Sweden and Japan. These countries have been spared from serious drought and flood over the past decade mainly because their forest areas have respectively come to 74 percent, 53 percent and 66 percent. [HK241525] We also have this experience. The Gaoxigou production brigade of Mizhi County in Shensi Province was once engaged in extensive farming with low yields, with water losses and soil erosion being very serious. It later devoted part of its farm land to develop animal husbandry and increase forest and grass acreage. Farming acreage was cut down to one-third while the other two-thirds were equally used for forestry and grazing areas. Though the farming acreage was reduced by two-thirds, the production brigade reaped abundant fruits and grains. Total grain output has been increased as much as 7 fold. But over the past few years, our forests have been recklessly felled and grassland spoiled. This has resulted in abnormal climate and frequent recurrence of floods, drought and sandstorms. Our grassland has declined and some farmland turned to sandyland, with water losses and soil erosion becoming more serious. The volume of shifting sand of the Huang He is 1.6 billion tons per year, and the situation of the Yangzi Jiang is not likely to be any better than the Huang He. Therefore, it is very important to develop tree and grass planting and fully display their role of adjusting climate, preventing water losses and soil erosion and preserving water and use forests and grasslands as wind and sand barriers.

In short, to change natural conditions to realize agricultural modernization and insure that our agriculture will develop consistently and rapidly, it is important to simultaneously develop agriculture, forestry, animal husbandry and sideline production.

Comrade Mao Zedong said: The formation of the people's communes has combined industrial, agricultural, military, education and trade circles with agriculture, forestry, animal husbandry, sideline production and fisheries and has greatly promoted agricultural production and the economy of the whole rural areas. Our purpose in taking the road of simultaneously developing agriculture, forestry, animal husbandry, sideline production and fisheries and in comprehensively developing agriculture, industry and trade is to display the superiority of the collective economy of the people's communes.

The following theoretical questions must be solved: With the development of mechanization and modernization, labor productivity will be increased, and the surplus agricultural labor fources used to undertake diversified economic activities and sideline production and to engage in the sales of the products of these undertakings. Can we say this as "discarding agriculture while undertaking trade?" I think it is an inevitable trend in the development of agricultural modernization. The process of our agricultural modernization is the process of the agricultural labor force turning from solely producing grain to gradually promoting agriculture, forestry, animal husbandry, sideline production and fisheries and rural industry (enterprises run by people's communes and production brigades). Diversified economic activities and rural enterprises will help accumulate capital for mechanization and modernization, thus making it possible for people's communes and production brigades to attain industrial equipment. Is it good to "develop agriculture by developing sideline production" and to "develop agriculture by developing industry?" I claim it is very good. In no way can we call these measures as "discarding agriculture while undertaking trade" and criticize them. Under the influence and sabotages of the ultraleftist line of Lin Biao and the "gang of four," there were quite a few restrictions. Measures taken to simultaneously develop agriculture, forestry, animal husbandry, sideline production and fisheries were labeled as having a "wrong direction," and those taken to comprehensively develop agriculture, sideline production, industry and trade were labeled as "capitalism." All these restrictions bound people's thinking. Peasants just concentrated their efforts in grain production. The more they did so, the narrower their road became; soil fertility dropped and the income of the peasants declined. Therefore, we must simultaneously develop agriculture, forestry, animal husbandry, sideline production and fisheries and comprehensively develop agriculture, sideline production and industry and trade. These measures should be regarded as the only way to modernize our agriculture. By doing this we will be able to smash mental shackles imposed on the people by the "gang of four." All policies, methods, systems, regulations and management that will hinder the development of simultaneously promoting agriculture, forestry, animal husbandry, sideline production and fisheries and comprehensively promoting agriculture, industry and trade must be reformed after investigations and experiments are made.

/Second, Realize Agricultural Modernization Systematically and With Emphasis Made on Major Projects./ Agricultural modernization is a fairly long period of social development. The United States took 50 years to basically realize agricultural modernization from 1889 to 1940. Japan took almost 60 years. But Japan began their modernization through chemical fertilization. From 1880 to 1937, Japan applied 100 jin fertilizer on each mu of farm land. Our agricultural modernization no doubt will take quite a long time because in modernizing our agriculture we have to realize the above-mentioned six modernizations. According to our country's situation the process of our agricultural modernization will have the following five characteristic features:

[HK241530] /1. Undertake Readjustment and Restruction and Stride Forward. Living Standards of Most Peasants Are Low and the Collective Foundation Is Weak./ In 1977, the peasant average per capita income was only 65 yuan with the lowest being less than 20 yuan. The poor production brigades with an average per capita income of less than 40 yuan and 50 yuan made up 40 percent of the accounting units of the whole country. Per capita grain distribution throughout the country was 407 jin for the whole year, which meant that 130 million had less than 1 jin per day each. The fixed assets of the ownership at the three levels of people's communes, production brigades and production teams only averaged 283 yuan per labor force and at the average of 49 yuan per mu. The U.S. fixed assets per labor force was on the average of 41,000 yuan; Japan was 520 yuan per mu. They are respectively 140 fold and 9 fold higher than the present standards of China. The production brigades' fixed assets are 10,000 yuan on the average, not enough even for the purchase of a big tractor. It is apparent that the most urgent task at present is to let the peasants have enough time for a period of recuperation to build up strength with emphasis being given for an all-round implementation of the party's various economic policies for rural areas. During this period, we must mobilize the initiative of the peasants to increase farm output and their income so they will have ample food and clothing while the production brigades will have funds accumulated. Only by doing this will the peasants be eager to do their work and strive for agricultural modernization. In addition, work must be done to readjust, restructure, consolidate and improve industrial departments, particularly farm machine building departments and farm chemical industrial departments so that these departments can meet the demands for agricultural modernization by supplying enough products of quality. The management of people's communes and production brigades must also be readjusted and improved. During this period, efforts must be made to train technicians in preparation for modernization before the communes and production brigades purchase the machines they need. It is better to complete this preparation in a 3-year readjustment period. Having completed this preparatory work, we will be able to stride along the road to agricultural modernization.

/2. Proceeding From the Situations of Most Areas, We Must First of All Undertake Chemical Fertilizing, Improve Fine Strains of Seeds, Water Conservancy Facilities and Engage in 'Garden' Cultivation and Then Proceed to All-round Mechanization./ How did the advanced countries start their agricultural modernization? How did they emphasize their works in each certain period? Of course, each country did it according to their specific conditions. For example, the United States and Canada that have vast areas with an average of over 10 mu per capita but short in labor force began their modernization by improving mechanization to increase labor productivity in a bid to solve the shortage of labor force. Having basically attained mechanization, they improved seed strains and water conservancy facilities and the application of chemical fertilizer to increase per unit yield. In 1937, when Japan's application of chemical fertilizer had already reached as high as 100 jin per mu, 60 percent of the U.S. farm land had not applied fertilizer. Japan, which is characterized by limited farm land and populous dwellers with an average of 8 fen farm land per capita, started their modernization from the use of chemical fertilizer, improving water conservancy facilities and seed strains so as to increase per unit yield. They then proceeded to intensive farming, and on the basis of higher yield, developed mechanization. Japan highly developed its farm mechanization only after the 1950's. Crop cultivation in some hilly regions up to now is not done by machines. The number of Japanese peasant households that have completely mechanized their production is only about 10 percent.

The present principal contradiction in most areas of our country is that we have an enormous labor force but not enough grain and commodity economic crops. Thus, it is very urgent to improve water conservancy facilities, "garden" cultivation, fertilizer and fine seed strains and management and expand the acreage that insures high yields irrespective of drought and floods so as to increase per unit and total output. Investigations have shown that the comrades from Jiangsu Province have suggested that the province should start by improving water conservancy facilities and chemical fertilizers before they undertake mechanization. The comrades from Anhui Province said that they should start by improving water conservancy facilities, soil fertility, fine seed strains and plantations. Mengzheng County of Anhui Province which is carrying out experiments, started by mechanizing water conservancy followed by fertilizers. This is a short way to modernization. Jilin Province said that the main reason of their low yield of dry land crops is that they do not have enough fertilizer and grassland. They said, if they have enough fertilizer it is not difficult to increase output by 30 to 40 percent. Of course, this province will selectively carry out their mechanization, but at present they do not concentrate their efforts in all-round mechanization. [HK241535] With regard to the northeast and northwest regions that have vast areas, little population and a shortage of labor force, they may use more labor in developing mechanization.

/3. Gradually Develop From Partial and Selective Mechanization to All-round Mechanization./ Agricultural mechanization in each region must be carried out according to its own specific conditions and the conditions of its various trades. Those items that are urgently needed by production and the people and can be quickly mechanized with quick returns must first of all be mechanized. By doing this, the per-unit yield, total output, income of peasants and their labor productivity can thus be considerably increased. The Pearl River Delta Plain and the Jianghan Plain must first of all mechanize their irrigation so they can solve the menace of floods and create conditions for high and stable yields. The bumper season in the Northeast, North and South regions coincides with the rainy season. These regions have suffered serious losses because a great quantity of their crops often rots due to rains and climate. So these regions must as soon as possible solve the problems of harvesting and threshing and drying by means of using related machines. Mountainous and hilly regions with backward transportation have devoted 30 to 40 percent of their labor force just to transportation alone, but still suffer great losses because they cannot transport their native produce and fruits and bring in capital goods in time. The first and foremost task of these regions is to mechanize transportation. Animal husbandry regions must first of all mechanize fodder processing and storage so the animals have enough fodder even in winter. The present situation in these regions is that they do not have enough fodder stock during the winter and do not have enough facilities to protect animals from cold. This has resulted in animals growing robust in summer, fat in autumn, thin in winter and dying in spring. In addition, a great number of animals die of calamities that occur every several years. Another problem is that these regions do not have enough cold storage and eventually cannot butcher animals during the fattening season. On the contrary, they butcher the animals in winter or herd them to cities for butchering. This brings serious damage to the fatness of the animals. They also cannot milk cows and sheep because they do not have storage facilities. This is also a great loss. The fishing industry also urgently needs cold storage. At present, about 30 percent of the fish caught spoils or is processed into salted fish because of the lack of storage facilities. The industry also needs oceangoing fishing vessels because China's offshore marine resources have been seriously spoiled. If we carry out mechanization according to the above-mentioned aspects, we will be able to achieve quicker and greater returns with less investments. This will not only be urgently welcomed by the peasants but will also quicken the process of mechanization. If we can solve the problems of transportation, processing, drying and cold storage, then we will be able to realize mechanization with better and quicker result, and under the same production conditions we will be able to increase the social wealth by several fold.

/4. First Modernize Major State Farms, Suburban Areas of Big and Medium Cities, Particularly Important Commodity Bases (Including Production Bases of Grain, Industrial Crops, Forestry, Animal Husbandry, Fisheries and Fruits and Imports), and Then Expand the Modernization Throughout the Country./ Our present finance, foreign exchange, materials and technology that can be diverted to support agricultural modernization are still limited; therefore, we cannot modernize all aspects simultaneously. Priority must be given to modernizing those units with better natural and economic conditions, a higher percentage of commodities, higher investment result and those which are important in their own areas. Such units are major state farms and suburban areas of big and medium cities, particularly those important commodity bases. The modernization of other aspects must follow later. There are greater advantages in doing this: First, we will be able to achieve quicker and better results in agricultural production in a shorter period and quicken the modernization as a whole; second, we will be able to accumulate funds with quicker result to support other units, particularly those poor communes and production brigades; third, we will be able to accumulate successful experiences more easily and set examples for other units. There are still a number of poor regions in the northwest and southwest parts of the country with the peasants there not having enough to feed themselves, let alone carry out modernization. The peasants of these regions must have a longer period of rehabilitation so we can help them develop diversified economic activities, run well commune and production brigade enterprises and accumulate funds and create conditions for modernization.

/5. Automation, Mechanization, Semimechanization and Handtools Will Simultaneously Exist for Quite a Long Period Before They Gradually Develop Into Complete Modernization./ Because our country is characterized by huge population, an enormous labor force, weak foundation and very backward economy and because of the four modernization process mentioned above, it is inevitable that automation, mechanization and semimechanization facilities and handtools, advanced and relatively backward technologies, big and medium and small enterprises and the handicraft industry will simultaneously exist for quite a long period. [HK241540] By so doing, we have the following advantages: We can fully display the role of various tools and other equipment when our country is currently not able to provide so much advanced technology equipment; we will be able to provide more employment for enormous rural labor force, fully tap our country's enormous labor force and develop production in depth and breadth. It is neither necessary nor possible to replace all production equipment and tools with modern ones in one morning.

We must have a correct attitude toward the relations between imported, new and advanced machinery equipment and those made by our country, and the old and backward equipment. To raise our technological standards it is imperative to import advanced technological equipment selectively. But because of our limited finance and foreign exchange, we must not depend heavily on imported equipment in realizing our agricultural modernization. On the contrary, we must mainly concentrate our efforts on improving the manufacture of our agricultural machinery, in producing complete sets of equipment and in using them well. Generally speaking, machinery equipment made by our country is lower in efficiency than those imported from other countries, but our equipment is lower in investment. The efficiency of our equipment can be raised when they are properly used. Our country is no doubt to continue to manufacture machinery equipment of better quality and higher efficiency. But because of our limited finance and material resources, the most important thing at present is to manage and maintain well our equipment, combine them to form functional systems and make full use of all mechanized, semimechanized equipment and farm tools. Our present farm machinery in general makes up 50 to 60 percent of the fixed assets of a people's commune or production brigade. Some are as high as 80 percent. This equipment has been bought through the savings on food and clothing by the peasants, who worked hard to earn it. So it is a great waste if we do not use this equipment well. Efficiency of farm machinery depends on many factors. We cannot discard that machinery made several decades ago in seeking new and big foreign equipment. In addition, that equipment made by foreign countries are not necessarily all big and of high standard. For example, most Japanese farm machinery is portable. Of the handguided tractors made by Japan in 1976, 64 percent were equipped with less than 5 horsepower motors while four-wheel tractors with over 30 horsepower only came to 3.3 percent. The facilities of Japanese chicken farms are very simple. They have no heating facilities in winter and to let sunshine in and air ventilate, they just raise the canvas walls on both sides of the building. Most of our regions have limited cultivated land and a weak foundation; therefore, we cannot blindly seek after big and high standards equipment.

I think it is in line with objective economic laws to acknowledge that it is a long social process to realize agricultural modernization, which can only be carried out systematically and with emphasis made on several aspects. By doing this, we can display the superiority of the socialist system and quicken our modernization. It is wrong to think that modernization can be easily realized just in several years or to think that it is still very far away. This thinking is not in conformity with objective laws. It is also harmful.

Part II

HK041500 Beijing JINGJI GUANLI in Chinese No 10, 25 Oct 79 pp 4-9 HK

[Article by Zhan Wu [6124 2976] of Agricultural Economic Research Institute: "Follow the Chinese Road to Agricultural Modernization"--passages in slantlines denote boldface print]

[Text] /Third. Develop Agricultural Modernization Systematically and in an All-round Coordination/

The modernization of our socialist agriculture can only be realized when the production of the whole society, technology, science and culture have been greatly raised and all economic departments have developed proportionately. From a long point of view, an all-round agricultural modernization can be realized only after we have modernized the abovementioned means of production, production technology, conditions for production, range of products, production organization and production management. When we have mechanized the tools of production, we will then be able to increase labor productivity enormously and emancipate a great amount of manpower in rural areas. Farm mechanization not only helps improve cultivation, planting, the application of chemical fertilizer and emancipates manpower that can be shifted to carry out diversified economic activities but also provides conditions for increasing per unit yield and income. When each region is able to realize specialization and socialization in organizing production, then we will be able to extensively use machinery and advanced technologies in production. We will be able to increase per unit yield and total output only under the condition in which we have extensively applied chemical fertilizer and used good seed strains. The reason that the world's grain output increased tremendously on four occasions was mainly due to the use of good seed strains and the extensive application of chemical fertilizer. It is also true that when water conservancy facilities are extensively used and "garden cultivation" of fields is carried out, our agriculture will be able to maintain high output. Once we resort to scientific technology and advanced production management, we will be able to make full use of the advanced means of production with due economic achievements. Extensive application of chemical fertilizer, extensive water conservancy facilities, "garden cultivation" of fields, scientific technology and other measures to modernize agriculture are interrelated with and complementary to each other. For example, in carrying out water conservancy projects it is necessary to carry out biological work. If we carry out the projects in isolation without undertaking afforestation, the projects will not be successful. The only way to develop agriculture is through mechanization because mechanization is vital in modernizing agriculture. But mechanization does not mean modernization. If we regard our agricultural modernization as no more than just mechanization and regard mechanization as our goal or if we pay attention to some aspects and neglect others, then our agricultural modernization will be far from complete.

In carrying out all measures mentioned above in modernizing our agriculture, we must maintain proportionate relations among these measures to enable all departments concerned to develop coordinately. These relations are:

1. /The Relations Between Engines and Cultivating Machinery, Main Machines and Accessories./ The main problem in modernizing agriculture is the serious imbalance between the number of machines of different types and between the number of primary machines and that of accessories. They can hardly be matched into complete sets of equipment. In advanced countries, a tractor is usually coupled with many cultivating tools which means that a machine is versatile and can do many types of work at the same time. So the tractor is high in efficiency. But in our country, a tractor is coupled with only a few farm tools. The ratio between a tractor and farm tools in Guyuan region of Ningxia Autonomous Region is 1 to 1 and Henan Province is 1 to 0.4. The ratio in the state farms was 1 to 5 in 1965 but had dropped to 1 to 3 in 1976. American friend Mr Hinton criticized us for producing a large number of tractors but not enough farm tools. This situation means that a number of tractors are not in use. This situation can be linked to producing boats without making the necessary sails. What is more serious is that there are few complete sets of farm tools and the quality is low. The number of idle and half-idle large and medium-sized tractors in Jilin Province made up of 20 percent of the province's total last year, and guided tractors 30 percent, machine-driven rice transplanters 40 percent and diesel engines used by mechanical wells being as high as 50 percent. Last summer, almost 500 engines in the province were unable to operate because of low quality cylinders. The number of farm machinery has increased considerably over the past few years, but the cultivated areas have increased very little or have even dropped. For example, the number of large and medium-sized tractors in Anhui Province have increased 25 fold and handguided tractors 40 fold over the past 12 years, but the cultivated acreage under farm machinery had only increased by 0.6 percent. Therefore, it is imperative to readjust all the proportions of farm machinery made during the present 3-year readjustment period so we can make full use of the present 170 million h.p. of farm machinery.

2. /The Relations Between Cultivating Machinery and Transportation Facilities./ Our country supplies 8,000 trucks for agricultural production every year, which is a very small proportion. In Xinjiang Autonomous Region, the proportion between trucks for agricultural use and tractors is 1 to 7.6. But the proportion in West Germany is 1 to 1, the United States 1 to 1.4, Canada 1 to 1.5, the Soviet Union 1 to 1.7 and Japan 1 to 3.1. The lack of transportation facilities has seriously affected our farm production. [HK041505] Heilongjiang Province can save 2.5 to 3 billion jin of grain fodder each year if it is able to replace carts with cars. This figure equals the amount of commodity grain the province hands over each year to the state. Over the past few years, peasants have purchased tractors for use as agricultural trucks. Although people's communes and production brigades that have used tractors for transportation have been criticized for "not doing their job properly" and creating the "capitalist tendency in the collective economy," yet the number of tractors used in transportation has continued to increase. A study of this situation has revealed that trucks made from certain tractor parts not only have higher capacity and speed but are also more economical, can we not make more trucks for agricultural use and cut down on tractor production?

3. /The Relations Between Agricultural Departments and Other Departments Concerned./ Modern agricultural production is a specialized and socialized mass production. Such production cannot be carried out smoothly without close coordination between specialized companies that are serving agricultural production and other departments concerned. Farm machinery must be in close coordination with and in the service of agronomy, and agronomy must create conditions or the use of machinery; they rely on and promote each other. In the past, these two were not in good coordination which resulted in a great number of farm machinery being discarded. This not only brought heavy losses but also affected mechanization and profits. Japan sent a delegation to our country a decade ago to study rice transplanters. But as Japan as closely combined farm machinery with agronomy, their acreage of mechanical transplanting has now increased to 80 percent. But our acreage is only 0.7 percent, because our farm machinery has departed from agronomy. Mechanization work must also be in close coordination with animal husbandry production so that mechanization will provide more fodder. The U.S. fodder processing industry has become one of the country's 20 major industries, with a production value higher than that of the farm machine building industry. But we have no fodder processing industry. Suburban areas of a number of large and medium cities have failed to mechanize the animal husbandry and poultry industry. One of the main reasons for this is that they did not coordinate with fodder companies, egg and hog species companies, machine repair companies and other modern and specialized companies. These areas thus undertook the animal husbandry and poultry industry without cooperation with other departments concerned. Although these undertakings were small in size, they eventually became versatile but their production cost was too high. It is quite natural that these undertakings were bound to fail. Energy supply is also very important in modernizing agriculture. The electricity consumed by the agriculture of Shihjiachuang in 1977 and 1978 was respectively 74 and 92 percent of the 1974 level. Yexian County of Shandong Province, which has a capacity to machine-plow 90 percent of the cultivated areas, was only able to do 60 percent last winter because of shortages of diesel oil and other fuel. A number of production brigades were compelled to use mule-drawn plows. Therefore, it is necessary to set up and develop service trades and to have agricultural departments coordinated with industrial, transportation, commercial and supply and marketing departments. In modernizing agriculture it is imperative to develop commerce and other trades that are serving production and consumers. The number of staff employed by commercial and financial sectors in advanced countries makes up more than 50 percent of the total staff. The figure for Japan is over 25 percent. But in our country the figure is only 3 percent. This situation must be changed as soon as possible.

4. /The Relations Between Agricultural Production and Agricultural Scientific Research Work and Education./ Some advanced countries are paying much attention to agricultural scientific research work and education. Some U.S. scientists have claimed that scientific research work and education are more vital to agricultural mechanization than investment. According to their analyses, the United States has been able to increase farm output by 81 percent and production efficiency by 71 percent because they carried out scientific research work. They called education in agriculture "investment of knowledge" with invisible results,

and yet it is a factor with tremendous and long-term effects. Japan also admitted that their high-standard agricultural science and technology is first of all attributed to education in agricultural science. Our experience has also proven that to manage farm machinery well and raise its efficiency, it is imperative to raise the standard of farm machinery technicians. The foundation of our agricultural scientific research work and education is rather weak. In addition, this foundation was seriously hampered by Lin Biao and the "gang of four." The rehabilitation and development of this foundation has not been quick enough to meet the demand of agricultural modernization. There is a serious shortage of farm machinery operations in our vast rural and animal husbandry areas. Many of them are not competent and some are semi-illiterate. In some places, a great proportion of the youth are illiterate. Management staffs generally have not acquired the knowledge of production technology and natural and economic science. Agricultural scientific networks in various levels are far from complete, with many becoming a mere formality. The number of students still studying at higher agricultural institutions is only one-18,000 th the number of farm laborers. [HK041510] The number of the students of the agricultural technical schools is one-13,000th of the number of farm laborers. The figures for France are respectively one-500th and one-50th. We must take effective measures to step up agricultural scientific research work and education, train a great number of technicians, set up courses on production technology and natural and economic sciences for management staff and exercise strict examinations. In short, this problem must be solved before we are able to raise the standard of science and culture enormously and realize agricultural modernization. In addition, it is also very important to study and grasp the proportionate relations between agricultural accumulation and consumption and between farm production and the growth of population.

I think proportionate development of agricultural modernization with all-round coordination is in line with the law of socialist economy. It is only in this way that we can display the superiority of the socialist system and quicken the process of agricultural modernization. If we pay attention to some aspects and neglect others we will not only be unable to coordinate all departments concerned but will also spoil the interrelated proportionate relations, and our agricultural modernization will not be able to develop rapidly and smoothly.

Experience of the second production team of the fifth branch of the friendship farm in Heilongjiang Province in carrying out an all-round mechanization experiment proved that in modernizing our agriculture it is imperative to develop agriculture simultaneously with forestry, animal husbandry, sideline production and fisheries and to develop agriculture, industry and commerce comprehensively. All these must be undertaken systematically and proportionately, with stress made on some aspects. In this way, our agriculture, forestry, animal husbandry, sideline production, fisheries, industry and commerce will all develop in coordination.

The second production team is experimenting with agricultural mechanization with complete sets of modern U.S. equipment. Their experience has proven that modern equipment no doubt has advantages. For example, it has helped enormously in saving labor power, shortening labor time, lightening labor intensity and increasing labor productivity. But the economical result has not been ideal enough, with a number of lessons learned. These lessons are: 1) the labor power saved by mechanization must be arranged in due time. The production team saved 293 laborers last year thanks to mechanization. Of these, 120 have been assigned to reclaim barren land but most have not been assigned any jobs. Outwardly, the team has saved labor power but since a certain number of the saved laborers have not been assigned any job and are still given their salaries, the whole situation has not changed.

I suggest that the labor power emancipated by mechanization be assigned to work in the farm product processing industry, other industries in rural areas ; horticulture or modern greenhouses to enable them to display their economic effectiveness. 2) Complete mechanization in agriculture must not be carried out in isolation. It must be accompanied by extensive water conservancy facilities and good seed strains. A production team is located on the Sanjiang Plain, with the weather there once being favorable for crops. But over the past 5 years, it has been seriously hit by drought because of atmospheric circulation and large scale land reclamation projects that have resulted in a decrease of marshland and an unbalanced ecology. The team did not get the supply of irrigation machinery in time last year and its 6,285 mu of wheat seedlings were seriously hit by drought. As a result, 5,000 [as published] brought no yields at all while the remaining 285 only yielded 47 jin each. The production team even failed to recover the seeds. The output of beans and corn also decreased because the team failed to irrigate in time. In addition, the team did not pay much attention to the use of good seed strains and did not have enough specialized seed companies to provide it with good seed strains. In seeding corn last year, the team used low quality seeds and had a high incidence of diseases. The corn grew unequally with uneven maturity time and uneven ears. Many stalks fell to the ground which caused the ears to drop easily. During the later harvesting period, the production team lost 10 percent of the corn.

3) All farm machinery must be in good proportionate relations so they can be matched into complete sets of equipment. Last year, the production team was not in a position to match its farm tools into complete sets of equipment. The tractors imported from the United States were designed to draw five sowing tools but only three were imported. Thus, working with three tools, the tractor was in fact wasting horsepower. In addition, because the production team lacked complete sets of equipment, a number of farm work such as loading and unloading seeds, fertilizer and grain, drying grain and sending it to storehouses were all done manually. This meant a decrease in labor productivity and an increase in production cost.

4) It is necessary to coordinate with specialized service companies and departments concerned. The 5,655 mu of corn fields of the production team was planned to be harvested in 6 days by a combine harvester. But the production team was in short supply of electricity and was unable to dry the corn in due time. The harvesting work was completed in 13 days instead. During the later harvesting period, the production team was hit by storms and corn output decreased. [HK041515] A second production team was a small and versatile community and in carrying out experiment in mechanization it still retained its character of farm community. The team's actual workdays last year totaled 17,700. The number of farm laborers taking part in the work totaled 57. About half the laborers were engaged in farm production while the rest were engaged in selecting seeds, collecting corn, handling chemical fertilizer or working on threshing grounds. Thus, the production team's situation show that if we merely realized mechanization in production but do not organize specialization and socialization in production, we will not be able to organize the labor force with due economic results.

/Fourth. Increase Economic Efficiency of Modernization and Arouse the Socialist Enthusiasm of the Broad Masses of Peasants and Workers/

The basic way to gradually realize our socialist agricultural modernization is to rely on and display the superiority of socialism and fully arouse the enthusiasm and creativeness of the 800 million peasants and workers. Therefore, it is imperative to step up ideological and political work and socialist education. Politically, we must fully display democracy so that all people's communes, production brigades and workshops are truly run democratically and all peasants and workers treat their undertakings as their own. Economically, we must constantly increase the economic efficiency of agricultural modernization so that our agriculture will be able to increase both output and income. Our experience has proven that the peasants will really support agricultural mechanization and modernization once these two developments bring about economic achievement, raise labor productivity, increase output and income and provide material interests for raising their living standard. If the mechanization and modernization do not bring about material interest, all ideological and political work will lose its material foundation and it will be difficult to achieve results in mobilizing the enthusiasm of the peasants. It is exactly in this aspect that a number of problems have yet to be solved. It is true that the supply and use of farm machinery, chemical fertilizer, pesticides and plastic sheets have increased considerably over the past few years and have brought about apparent economic results. It is also true that some people's communes and production brigades have increased both output and income through the use of these means of production. But the number of such people's communes and production brigades is very limited. Most people's communes and production brigades have not yet achieved apparent economic results; some have been able to increase output but not their income while others have had less income although they have increased production. The amount of farm machinery in 1976 was 8.3 times higher than in 1965, with the supply of chemical fertilizer increasing by 2.6 times while the total income of agricultural production only increased by 0.8 times and expenditure by 1.3 times. The ministries of commerce and agriculture and forestry and the general office of the supply and marketing cooperatives have carried out investigations on 2,163 units in 23 provinces, municipalities and regions. According to their investigations, per mu grain output in 1976 was 36 percent higher than in 1965, production costs increased by 54 percent and the value created by each labor day had dropped 20 percent from 0.70 yuan to 0.56 yuan. According to investigations carried out by the state's statistics bureau on 5,270 peasant households in 16 provinces, municipalities and regions, the peasant per capita income in 1977 on the average was 4.0 yuan higher than in 1965, with an average of 0.33 yuan increase annually. In 1978, the peasant per capital income on the average was 9.23 yuan higher than the previous year, an increase of 12.3 percent. But the net income of production brigades only increased slightly because of high production costs. Total income of the country's basic accounting units of the people's communes in 1978 had increased 12.8 percent over the previous year and total expenditure by 10.4 percent, with this figure making up 34.4 percent of the total income, only 0.7 percent lower than the previous year's figure of 35.1 percent. Production costs in 11 provinces and regions in 1978 were higher than the previous year. This situation merits our attention.

There are many factors that have caused indistinctive or bad economic results. In short, they have been caused by the state, the departments concerned, the people's communes and the production brigades. [words indistinct] is that the state and the departments concerned must help people's communes and production brigades eliminate obstacles and create conditions for them to develop; to do this, we must solve the following four points:

1. /Provide Quality Farm Machinery and Other Means of Production With More Variety and Complete Sets of Equipment./ All farm machine building industrial departments must, during the readjustment period, take effective measures to reform farm machine building industry to enable the industry to produce generalized, standardized and serialized products and change the present situation in which a number of our farm machines are not up to standard and do not suit the need of the peasants. Our farm machinery are not in complete sets and cannot be repaired when they are out of order. This situation is against the interests of the peasants. We must produce condensed, synthesized and granulated chemical fertilizer with long effectiveness. [HK041520] We must produce high quality, high efficiency and low poison-level pesticides, herbicides and plastic sheets with low cost. If we can do this, then we are really supporting agriculture, promoting agricultural modernization and helping raise the economic result of modernization.

2. /Rationally Readjust the Price Parities Between Industrial and Agricultural Products and the Price Parities Among Agricultural Products./ Agricultural mechanization and modernization means using concrete labor in place of live labor. But the standards of our industry are low and the prices of concrete labor, that is farm machinery, chemical fertilizers, pesticides, plastic sheets and herbicides are many times higher than those of advanced countries. Therefore, even if the efficiency of our agricultural mechanization reaches that of advanced countries (now our efficiency lags far behind), when 5 yuan of concrete labor in our country equals 1 yuan of live labor, then 1 yuan of concrete labor in an advanced country equals 5 yuan of live labor. This means that an advanced country can save yuan and we have to spend more yuan for the same labor. For example, Xingang production brigade of Wangji people's commune in Xinzhou County, Hubei Province was able to save 7,660 man-days when it used rice transplanters to replace manual labor but it spent 12,000 yuan for the machine. It means that each man-day costed 1.57 yuan on the average while the value of each labor-day was only 0.70 to 0.80 yuan. The production brigade thus had a 50-percent deficit. In addition, there are so many intermediaries that a people's commune or production brigade has to pay higher prices for industrial products. For example, the import price of 1 ton of plastic material used by fisheries is 830 yuan. But after passing through six intermediaries and after the material is processed into fishing nets, these nets are sold to people's communes or production brigades at 10 yuan, 530 per ton, 10 times higher than the price of the imported material. Jiangsu Province pointed out that the price of plastic sheets to cover one mu of field equals 300 to 400 jin of grain or 20 to 30 jin of ginned cotton. The peasants have said that plastic sheets for agricultural use are of course good but the prices are too high for them. In addition, the purchasing prices of agricultural products are still low.

Therefore, the peasants have generally lost profits from their products. According to calculations, Shensi loses 6.88 yuan from each mu of cotton, Liaoning 17.16 yuan from each mu of beans and Sichuan and Shanghai respectively lose 19.27 and 17.16 yuan from each mu of rapeseeds. It is, therefore, imperative for agricultural industrial departments to improve their management and administration and lower production costs and the sales prices of their products. In addition, the number of medium links must be cut down along with circulation costs so as to lower sales prices. All these measures will help cut down the production costs of people's communes, production brigades and state farms. The purchasing prices of agricultural products on the average increased by 20 percent last year and this year. The problem now is that we must cut down the number of intermediaries. When conditions permit, we must try to sell industrial products directly to the peasants so as to lesson duplication of procedures and enable the increases in farm product purchasing prices to really benefit the people's communes, production brigades and commune members. Measures must also be taken to readjust the price parties of agriculture, forestry, animal husbandry, sideline production and fisheries and among cash crops and grain. These parties must be kept rational so that the productions in all fields will develop evenly and all fields will improve their economic results.

3. /Reform the Agricultural Management System./ Modernization of socialist agriculture brings about social mass production. This production demands that all departments concerned must closely coordinate so that labor productivity can be increased enormously and so that production itself will achieve good economic results. But our present agricultural management system cuts apart the organic relations among economic departments. Under the present system, it is difficult either to simultaneously develop agriculture, forestry, animal husbandry, sideline production and fisheries or to develop agriculture, industry and commerce comprehensively. Under this system, farm machinery is separated from agronomy and transportation, main machines from accessories and production from the circulation of products. All this makes it difficult for us to carry out our work well. We must carry out agricultural modernization according to the laws of economy and nature. But under the present system, much work is done according to administrative orders. For example, the supply system is carried out and managed not from the point of economy but from the point of fulfilling the task assigned from above. With this supply system it is difficult to fully mobilize the positive factors of all departments of the central government, localities, enterprises and individuals. Each farm machinery industrial department does things in its own way, with it being impossible for the industry to mass produce those products that are up to standard, low in production cost and welcome by users. This is because of restrictions in the supply of materials. On the other hand, the supply of materials to make low quality and high cost products is continuously provided. But because of their quality, these products are either stockpiled or forcibly sold to people's communes and production brigades. [HK041525] This situation constitutes an obstacle in reforming our farm machinery building industry. A number of agricultural products, the products of sideline production and the products of the processing industry cannot circulate naturally because they can only circulate within province, a region or a county. Some are even transported again to where they were made. All this creates enormous economic losses. Socialist agricultural modernization demands that all

service trades must work with high efficiency. But under the present management system, we have only administrative organs but no high efficient service companies. This has resulted in overlapping administrative organizations and duplication of works with low efficiency. Therefore, on the basis of investigation and experiment, it is imperative to reform the present agricultural management system step by step to enable our agricultural modernization to develop smoothly and with higher economic results.

4. /Production Brigade Rights of Self-determination Must Be Respected./ Generally speaking, production brigades are very much concerned with their economic results; they know best the conditions in their localities and are good at taking measures to increase production and income according to their conditions. On many occasions, the interests of the peasants have been infringed upon with production brigades suffering serious economic losses. Most of these happened where the production brigades had no rights of self-determination. For example, the indiscriminate transfer of the labor force, funds and materials of production brigades can only increase their burdens. Another example is arbitrary and impracticable directions. A party secretary of Taoyuan County in Hunan Province once stayed at a selected production brigade to help improve its work and gain firsthand experience for guiding overall work. To enable the production brigade to produce more grain without regard to cost, he ordered 430 jin of chemical fertilizer be applied per mu. It was true that the production brigade was able to meet the standard by producing 808 jin of grain per mu, but the value produced by a workday was only 0.148 yuan. It meant that although the production brigade had increased production, its income had dropped. Regardless of specific conditions and interests, he led the masses of peasants in carrying out large-scale farm capital construction and set up a goal which was beyond the capability of the production brigade. He forcibly ordered double-cropping, reclamation of lands from lakes and the sea to be carried out in a bid to develop fisheries and grain production at the expense of forests and grasslands. All these brought serious economic losses to the production brigade. Another problem facing our agriculture is that some products are forcibly sold to production brigades. Concretely speaking, low quality farm machinery and other means of production are sold to production brigades together with good quality products. How can we solve all these problems that infringe upon the interests of the peasants and affect economic result? I think the most important way to solve these problems is to respect the production brigades' rights to self-determination. It means that production brigades have the right to determine their farm works according to their specific conditions, take measures to increase production, determine their own management and administration, distribute their own products and funds and oppose arbitrary and impracticable directing of any leading organ or leader. Of course, to respect the production brigades' rights of self-determination does not mean that the production brigades can oppose correct leadership or guidance in scientific technology.

On their part, the production brigades must do well in solving the following three questions:

1. /Good Arrangement Must Be Made for the Labor Force Saved by Mechanization./ The surplus labor force created by mechanization must be assigned to work in agriculture, forestry, animal husbandry, sideline production and fisheries or enterprises run by people's communes and production brigades to create more wealth. It is vital for people's communes and production brigades to increase output and income and raise economic results. It [words indistinct] arrangement of the labor force emancipated by mechanization will help develop production in depth and breadth and decide the degree of economic result. More and more of the labor force will be emancipated with the development of mechanization. Therefore, systematic arrangements must be made to develop agriculture, forestry, animal husbandry, sideline production and fisheries and enterprises run by people's communes and production brigades so as to enable to surplus labor force to engage in diversified economy. We must do well in controlling the proportionate relations between these undertakings and the amount of surplus labor. Our knowledge must not fall behind the development of mechanization; otherwise, the economic result of mechanization will be affected which will be accompanied by a waste of the labor force.

2. /Raise the Levels of Management and Administration./ The levels of our agricultural management and administration were originally backward. In addition, they were later interfered with and sabotaged by Lin Biao and the "gang of four." The result is that our present management and administration are not in line with the demands of agricultural modernization. The management of farm machinery is a striking example. First, although we have a number of farm machines, we are not in good position to operate and repair them. [HK041530] One-third of the operators throughout the country have received no regular training. A number of them only can operate the machines but cannot repair them. Some cannot operate in the fields. Second, we do not make enough arrangement to take care of machinery. Throughout the country, 30 percent of the people's communes do not have farm machinery management organizations. Third, we cannot do repair work. Thirty percent of farm machinery are out of use while in some provinces the figure is as high as 42 percent. If we improve management work and increase the amount of farm machinery that is in good condition by 10 percent, we will be able to add 200,000 tractors and almost 7 million horsepower for irrigation. Investigations made on four counties in Henan Province show that these counties have been able to increase the number of farm implements that are in good condition by 50 percent after setting up management organizations coupled with a reward and penalty system. The Yuechi first production brigade of Wu County in Jiangsu Province has generally improved its regulations and stepped up management of production, finance, farm machinery service and labor. The county was then able to mobilize the enthusiasm of operators. Each tractor was able to increase the plowed acreage by 22.2 percent a year, with repair and fuel fees respectively dropping by 17 and 49 percent and the county being able to save two machines. This proves that scientific management will help to enormously increase output and income. If the management levels of farm machinery, production, labor, planning and finance are increased to a certain degree, we will be able to increase economic results by several fold under the same conditions of production.

3. /Conscientiously Implement the Policy of Each According to His Ability and Each According to His Work./ To mobilize the enthusiasm of each of the 800 peasants and 300 million farm labor force and constantly achieve good economic results, the basic thing to do is to implement this policy. Once this policy is implemented, there is no doubt that our agriculture, forestry, animal husbandry, sideline production, fisheries, industry and commerce will flourish with more output and income. For example, in the first several months of this year, the catch of the nation's ocean fishing industry had generally decreased. The only one that reported increases in both catch and income was Changdao County of Shandong Province. Up to 23 May, the total catch of the whole county was 15 percent higher than last year's corresponding period. Total production value increased by 79 percent, the ratio of fish increased to 70 percent from 30 percent of the same period last year while production cost had decreased by 25 percent. There are two reasons for the success of this county: it carried our correct principles in production and conscientiously implemented the principle of each according to his ability and each according to his work, which means those who work more will get more. The county also used the method of rewarding those who fulfilled five production quotas and the method of fixing salaries according to the value made. It admitted the differences among trades, fishing vessels and individuals in a bid to overcome equalitarianism. Having mobilized the enthusiasm of the broad masses of commune members, the county is under a situation in which all commune members are working tirelessly, very careful in reckoning, practicing economy and striving for effiency. As a result, each fishing vessel and each production brigade has been able to increase output and income, lower expenditure and increase net income. The situation of this county has once again proven that all trades will be able to fully mobilize the enthusiasm of the broad masses of peasants, increase output and income and constantly raise economic results as long as they conscientiously implement the principles put forth by the third session of the party Central Committee: "Workpoints can be counted according to production quotas, piecework, labor hours, labor hours plus evaluation of the result of one's works or labor pay can be reckoned according to output when the production task is undertaken by work teams under the premise of unified accounting and distribution of production brigade." To each the above-mentioned goals, it is also imperative for all trades to conscientiously carry out the principle of to each according to his work and more to those who work more and also to eliminate egalitarianism.

In short, economic results are a question of principle. They are the starting point and end-result of modernization. They are the basic materialist viewpoint and the mass viewpoint of Marxists. It is an important matter that will decide whether the peasants will really support agricultural modernization and whether our agricultural modernization will be successful.

CSO: 4007

NATIONAL

COST OF MECHANIZATION ESTIMATED

Beijing GUANGMING RIBAO in Chinese 19 Aug 79 p 2

[Article by Wang Mengkui [3769 1125 1145]: "The Road of Specializing Agricultural Production Must Be Taken"]

[Excerpts] To modernize farming, it requires not only advanced production methods and the broad application of scientific technology, but also the reform of organization and management in farming operations and the total eradication of the backward condition of self-sufficiency in order to achieve production specialization.

In some developed countries, agricultural production is highly specialized. In their farms, the varieties of agricultural machinery employed are not many, and the number of machines is not very large. With a fairly small amount of investment, they have achieved a rather high standard of agricultural mechanization. In the farm of our American friend Hinton whom many of our readers know well, there are only 7 sets of farming machines and implements for his 1,680 mu of farmland. The operation is completely mechanized. His total investment was U.S. $83,400 at an average of less than U.S. $50 per mu. At the current rate of exchange, it is less than 80 yuan of our currency. As regards our country's investment in agricultural mechanization, I have seen a set of data of investigation on 36 production brigades in 22 provinces, municipalities and autonomous regions. At present, these brigades have not yet carried out the mechnaization of agriculture. According to the present level of mechanization and the amount of investment made, it is estimated that for each mu of farmland, the requirement of investment for mechanization will be as follows: 2 brigades each need 80 to 100 yuan, 21 brigades each need 100 to 200 yuan, 7 brigades each need 200 to 300 yuan, 2 brigades each need 300 to 400 yuan, and 4 brigades each need more than 400 yuan. The highest requirement will be 840 yuan. It shows that all these production brigades require greater investment in mechanization than Hinton's farm, the highest one is several times greater. China's present standard of agricultural mechanization is far below that of Hinton's farm. If this fact is taken into consideration, then the estimated amounts of investment appear even more excessive. There are many reasons for this, such as the prices and quality of agricultural machinery made in China, the lack of accessories and other factors; however, there is no doubt that the extremely important reasons are the low standard of specialization of agricultural production and the diversity of cultivation. Hinton's farm is specialized in production, that is, the cultivation of corn, and requires only a few machines of only a few types. Moreover, thanks to the high development of society's division of labor and commodity production, many things which his farm formerly did are undertaken by enterprises outside. His own labor is, in fact, only one of the links of the socialized system of agricultural production. In the case of our agricultural production, due to the low standard of specialization and diverse cultivation, plus an irrational farming system (such as the interplanting of crops) and other reasons, if the whole process of cultivation, from sowing to harvesting, for every crop is mechanized, it will be necessary to procure many types of farming machines and implements and, as a result, greatly increase our investments.

9039
CSO: 4007

USE OF WATER TURBINES IN IRRIGATION DEVELOPED

OW291319 Beijing XINHUA in English 1201 GMT 29 Dec 79 OW

[Text] Beijing, December 29 (XINHUA)--China has 44,000 water turbine pumping stations irrigating nearly 400,000 hectares of farmland. This was disclosed at a recent forum held by the Ministry of Water Conservancy in Hengdong County, Hunan Province.

The stations are equipped with over 63,000 water turbine pumps of different types.

The water turbine pump is more economical than other water-lifting devices since it is driven by the force of water and does not consume electricity or oil. It can be used to lift water so long as there is a water head and an adequate flow.

There was rapid development of water turbine pumps in southern provinces of the country in the mid sixties. Water turbine pumping stations have been built in most parts of the country on small as well as large rivers. They raise water from several metres to over 300 metres high. Small pumping stations often irrigate less than one hectare of farmland, while large stations linking up with irrigation systems can service over ten thousand hectares.

Water turbine pumps can be used to generate electricity. In some places, for example remote mountainous areas, small pumps can be used to light just three or four households.

Water turbine pumping stations have shown their worth. The Zexi water turbine pumping station in Shehong County, Sichuan Province, has 11 pumps installed which are capable of lifting 2.1 cubic metres of water per second and irrigating more than 3,000 hectares of farmland. The station also has a generating set with a capacity of 475 kilowatts. As a result, grain output has doubled in the irrigated area. The people and stock in the mountainous areas have drinking water and the problems of grain processing and lighting have also been solved.

The recent forum was attended by representatives of nine provinces and one autonomous region. They called for further strengthening of research work on water turbine pumps.

CSO: 4020

'RADIO BEIJING' INTERVIEWS WEATHER BUREAU OFFICIAL

OW300308 Beijing Domestic Service in Mandarin 1200 GMT 26 Dec 79 OW

[Interview with Zou Jingmeng, deputy director of the Central Meteorological Bureau, by a Radio Beijing reporter--recorded]

[Text] [Question] Deputy Director Zhou: Drought has persisted through this year's autumn and winter in many areas of China. Many of our listeners are concerned over this issue. What are the reasons for this continuous drought from fall to winter.

[Answer] All right, let me discuss this issue. Everyone knows that our nation has a monsoon climate. In general, rain is comparatively abundant in spring and summer in southern China. In the north, precipitation is concentrated in the summer. So far as the whole country is concerned, rainfall is comparatively light in autumn, and it is the lightest in winter.

After October this year, there came the autumn-winter period in which there was little rain. In addition, the air currents this year were different from the past. This did not favor the formation of rain and snow. Since autumn this year, the high-altitude air currents in China are moving mainly from west to east. The wind over most parts of China this year is not the southwest wind from sea that carries water vapor, but the westerly wind from the Asian Continent or via the Tibetan Plateau. This westerly wind is comparatively dry. The cold air mass coming down from the north has little chance to form clouds and bring rainfall when it meets with this dry westerly wind. This is the main reason why there has been little rain in the past 2 months. In addition, typhoons in autumn also affect the amount of precipitation in southern China. Since October this year, no typhoon has landed in China's southeast coastal area. This part of the country has not been affected by any typhoon. This is the reason why drought has been comparatively serious in China's southern provinces this fall and winter.

[Question] Will this drought be relieved soon?

[Answer] So far as the whole country is concerned, the drought is comparatively serious. Even if there are timely rainfalls and snowfalls, they can hardly relieve this drought immediately. According to our analysis based on the reference material we have, little rain is forecast for most parts of China this winter. This autumn-winter drought will continue for most parts of China. In most parts of northeast China, Gansu and Ningxia, and in the lower reaches of the Yellow River and the middle and lower reaches of the Yangtze River, however, rain and snowfall may be as high as in normal years or more. It is possible that drought can be relieved in these regions. More rain is expected to fall in most parts of south China and some parts of northern China next spring, thus alleviating or relieving this drought. However, there will still be little rain in some parts of northern China. It is possible that the spring drought will be more prominent next year in such areas.

[Question] If this drought in many areas of the country continues for some time, what measures must we take in agricultural production to combat this drought?

[Answer] This autumn-winter drought will mostly affect overwintering crops and crops sown in winter. It will also affect the sowing and sprouting of spring crops next year. Therefore, we have to foster ideas on combating drought over a protracted period. In agricultural production, we must pay attention to the following issues:

First of all, we must pay attention to moisture-preserving measures for all crops. We must adopt all types of moisture-preserving measures suited to local conditions, including proper irrigation, field management and deep-plowing. Efforts must be made to reduce evaporation. If there is a large snowfall, people should be mobilized to enthusiastically gather snow.

In addition, we must pay attention to the rational use of water and to water conservation. While combating drought, various localities must pay attention to efforts to combat cold spells and freezing weather. At the same time, we must strengthen leadership and organize manpower and material reosurces to combat cold spells and avoid damage. This is a task of great urgency.

CSO: 4007

AGRONOMISTS EXCHANGE VIEWS AT TEA PARTY

OW281600 Beijing XINHUA in English 1530 GMT 28 Dec 79 OW

[Text] Beijing, December 28 (XINHUA)--Noted Chinese agronomists exchanged their views and raised proposals on ways of promoting China's agricultural growth at a tea party sponsored by the Chinese Society of Agronomy here this afternoon.

Yang Xian Dong, president of the society, reviewed the work of the society in the past year. He said that seven societies affiliated to the Chinese Society of Agronomy, covering crop cultivation, plant protection, horticulture, etc., had resumed academic activities. Six new societies devoted to cotton cultivation, application of atomic energy, agricultural economy, bee-keeping, agricultural engineering and grassland development, and an agricultural modernization research group had been set up.

Of the more than 200 proposals made by scientists under the societies, many had already been adopted by government departments, the president said.

The Chinese Society of Agronomy had received more than twenty groups of visiting scientists from Australia, France, Japan, the Philippines, the United States, and other countries and sent representatives to a number of international conferences, the president said.

A committee had been set up by the Chinese Society of Agronomy to disseminate agricultural science and techniques, it was reported at the tea party.

Professor Cai Xu, an expert in crop cultivation, proposed that scientists majoring in different branches of natural sciences should strengthen co-operation in research work. Other scientists called for efforts to protect forests along the Yangtze in order to conserve water and soil and prevent silting of the river, and urged expansion of animal husbandry with special emphasis on cattle and sheep raising. A number of scientists called attention to the importance of training more young scientists for the country's modernization programme.

The tea party was attended by more than 70 professors, scientists and technicians.

CSO: 4020

BRIEFS

GREEN MANURE CLASS--The Ministry of Agriculture recently sponsored a training class in Wenzhou, Zhejiang, for popularizing techniques in cultivating and utilizing green manure in 13 provinces and municipalities in south China. More than 110 cadres in agrotechnology, scientists and technicians attended the class. An academic exchange on green manure was conducted with American scholars when the class was in session. [Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 17 Nov 79 OW]

MEETING ON RESERVOIR USAGE--Guangzhou--19 Dec--The Ministry of Water Conservancy, Ministry of Finance and State Bureau of Guangdong's Dongguan County on using reservoirs for fish breeding and other purposes. The meeting called on all water conservancy engineering units in China to develop diversified economy by using reservoirs and to achieve self-sufficiency in management costs and improvement of living conditions of their own staff and workers. The meeting noted that 40 percent of China's total inland fresh water area is suitable for aquatics breeding protects. [OW242233 Beijing XINHUA Domestic Service in Chinese 0304 GMT 19 Dec 79 OW]

RURAL HOUSING CONFERENCE--Qingdao, 14 Dec--A national rural housing conference, the first conference of its kind since the founding of new China, was held in Qingdao from 2 to 9 December. The conference was jointly convened by the State Capital Construction Commission, the State Agricultural Commission, the Ministry of Agriculture, the Ministry of Building Material Industry and others. It was pointed out at the meeting that at present and for some time to come houses in rural areas will mainly be built by the peasants with their own funds and building materials. The collective will give them some help, and the houses built will be owned by the peasants. Communes and brigades with more public funds can also build houses for rent. A rural housing office has been established in the State Capital Construction Commission. The provinces, municipalities and autonomous regions will also set up similar organizations to promote rural housing. [Beijing XINHUA Domestic Service in Chinese 0230 GMT 14 Dec 79 OW]

JUTE PROCUREMENT--China has fulfilled this year's procurement for jute, bluish dogbane and ramie. As of the end of November, 16.86 million dan of jute and bluish dogbane had been purchased, overfulfilling the annual state plan by 12.4 percent and exceeding last year's purchase by 1.2 million dan.

So far, China has procured 56,000 dan of ramie, overfulfilling the 1979 state plan by 4 percent and topping last year's figure by 170,000 dan. [Beijing Domestic Service in Mandarin 2230 GMT 13 Dec 79 OW]

AGRICULTURAL ECONOMICS SYMPOSIUM--Beijing, 9 Dec--The Agricultural Economics Society of China recently held its annual symposium in Miyun County, Beijing Municipality. Cai Ziwei, the society's president, presided over the symposium. Zhang Pinghua, first vice minister of the State Agricultural Commission, attended and delivered a report to the symposium. The meeting held that it is still necessary to implement the decisions on some questions concerning the acceleration of agricultural development and regulations concerning the work in the rural people's communes. The meeting also held that agricultural economy in China is still very weak and that without conscientious and continuous efforts, it will be impossible to achieve agricultural modernization. Some 180 papers were presented at the symposium. [OW152040 Beijing XINHUA Domestic Service in Chinese 0310 GMT 9 Dec 79 OW]

HARVESTER DESIGNER--Beijing, Dec 5--Sixtyone-year-old engineer Ma Ji is commended by today's "Workers' Daily" in its column "People Dedicated to Modernization". Ma Ji of the agricultural machinery research institute designed a harvester for fields of wheat intercropped with maize, which took four years to develop. It can also be used in paddy fields. The inexpensive and simple harvester was commended by the last national science conference. The engineer was one of the designers of China's first combine harvester made in 1954. Popularization of his new harvester in Tongxian County on the outskirts of Beijing meant that 53.6 percent of the county's fields were machine-harvested this year as against 13 percent just two years ago. Fifteen provinces or municipalities are manufacturing this harvester. [Text] [Beijing XINHUA in English 0508 GMT 5 Dec 79 OW]

PUMPING COMPLEXES OPERATIONAL--Beijing, Dec 6--Two pumping complexes, the Zuncun project in Shanxi Province and the Donglei project in neighboring Shaanxi Province, have been partially completed and are now lifting water from the Yellow River to irrigate farmland. Shanxi began work on the Zuncun pumping complex in April, 1976 and now 90 kilometres of the 125-kilometre-long trunk canal have been dug and the pumping stations at the first five levels have been installed. This summer, the system irrigated 16,000 hectares of farmland. This complex will have 20 pumping stations to relay water at ten different levels to 110,000 hectares of farmland. Construction of the Donglei irrigation complex started four years ago. Now key parts, including an intake gate, a pumping station and a 36.5-kilometre-long trunk canal, have been completed. This complex will include 27 pumping stations, big and small, which will combine to lift water 225 metres at a flow rate of 60 cubic metres per second to irrigate 67,000 hectares of farmland. [Text] [Beijing XINHUA in English 0758 GMT 6 Dec 79 OW]

CSO: 4020

BRIEFS

ANHUI PREFECTURE BUMPER HARVEST--This year the total output of grain and oil-bearing crops in Chuxian Prefecture, Anjui, reach 2,843 million jin and 95.3 million jin respectively, both being all-time high records. The per-capita income in the prefecture is expected to rise from 71 yuan of last year to around 90 yuan. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 6 Dec 79 OW]

ANHUI COUNTRY GRAIN OUTPUT--As of 19 November, Huaiyuan County, Anhui, had procured 200 million jin of grain, topping the quota by 47 percent, and had procured more than 4.3 million jin of oil and fat, topping the quota by 380 percent. This year the county reaped a bumper harvest of summer grain, with total output topping last year by more than 90 million jin. [Beijing XINHUA Domestic Service in Chinese 0214 GMT 6 Dec 79 OW]

ANHUI FARMLAND IMPROVEMENT--As of early December, Anhui had sent 1.46 million people to the countryside who had completed 30.22 million cubic meters of earth and stone work at 11,400 construction sites, of which 1,790 had been completed. [OW251226 Hefei Anhui Provincial Service in Mandarin 1100 GMT 21 Dec 79 OW]

CSO: 4007

BRIEFS

CONSUMER PRODUCTS RECORD PURCHASE--Beijing, 26 Dec (XINHUA)--Beijing's commercial centres reported a record purchase of pigs, eggs, ducks, milk and honey from suburban communes and peasants in 1979. This implies a better market supply and a higher percentage of Beijing's independence in its consumption of non-staple food, according to the city government deparment in charge of the work. As capital of the country, Beijing is developing simultaneously a city proper with a powerful industry and surrounding agricultural bases to support it. Nearly half of Beijing's population of over eight million are engaged in agriculture in the 14 counties or district in its suburbs. With 1,898,000 pigs and 21,900 tons of eggs purchased this year, or an increase of 3 and 60 per cent respectively over the previous year, about half of the city's pork and 60 per cent of its eggs are now supplied from the city itself. [Text] [OW260832 Beijing XINHUA in English 0745 GMT 26 Dec 79 OW]

CSO: 4020

FUJIAN

BRIEFS

FUJIAN TIMBER--The 124 state lumber farms throughout Fujian have fulfilled the state's plans for this year 50 days ahead of schedule. By early November, these farms produced 882,641 cubic meters of timber. The quality of products has also improved prominently. The industrial output value has increased by a comparatively wide margin over the corresponding period of 1978, while consumption and costs were reduced. This year, these state farms planted 119,700 mu of trees and replanted forest areas that were lumbered last year. [Fuxhou Fujian Provincial Service in Mandarin 0300 GMT 3 Dec 79 HK]

FUJIAN PREFECTURE GRAIN PROCUREMENT--By 11 December, Sanming Prefecture had overfulfilled its quota for grain procurement for 1979 by 1.65 million jin. [Fuzhou Fujian Provincial Service in Mandarin 0300 GMT 18 Dec 79 HK]

CSO: 4007

BRIEFS

GANSU FORESTRY—As of 10 November, Gansu Province finished planting trees on 15,381 mu of land, cultivating 3,923 mu of saplings, levelling 161,316 mu of forest land and collecting tree seeds on 330,000 jin. [Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 23 Nov 79 SK]

CSO: 4007

PROCUREMENT PRICES OF MAJOR AGRICULTURAL BYPRODUCTS RAISED

Hong Kong TA KUNG BAO in Chinese 27 Oct 79 p 3

[Text] Guangdong Province raised the procurement prices of 24 main agricultural byproducts according to the price readjustment plan approved by the State Council.

The average rise in prices of the major agricultural byproducts are as follows:

The unified procurement prices of food have been raised since 1 April this year from 13.6 to 28.5 percent. The provincewide average price of rice grain rose 21.58 percent, with 50 percent added price for the excess procurement portion.

The unified procurement prices of fat and oil: The provincewide average price of peanut rose 32.69 percent; peanut oil, 38.55 percent; sesame, sesame oil, rape seed, rape seed oil, cotton-seed oil, chaff oil, and soybean oil, from 9126 to 38.55 percent, with 50 percent added price for the excess procurement portion.

The procurement price of sugar cane: The provincewide average price of sugar cane rose 20 percent starting with the 1979-80 pressing season. An additional 25 percent is charged for that portion in excess of the alloted production for each nationally operated farm and collective farm.

The procurement price of live hogs: The provincewide average price of hogs rose 25.33 percent. In order to encourage hog production, an additional 6 percent is allowed for every hog weighing more than 140 jin.

The procurement prices of aquatic products: The provincewide average price of pond fish rose 30 percent; ocean fish, 21.31 percent.

The procurement price of lumber: The provincewide average price of lumber rose 29.27 percent.

There were also different degrees of price rises in such commodities as fresh eggs, beef cattle, hemp, silkworm cocoons, dried and fresh fruits, cinnamon, handicraft products and domestic animal products.

Besides these, the procurement prices of domestic fowl, the three main fruits, cassava, the native special products of mountain and forest areas, and four kinds of farm products have also been raised since the second quarter of last year.

According to an estimate of the Guangdong Price Bureau, as a result of the rise in procurement prices of the major agricultural products, the provincewide annual income of all the farmers is expected to increase approximately 450 million yuan, amounting to more than 10 yuan in extra income for every farmer.

9113
CSO: 4007

BRIEFS

HAINAN TROPICAL CROPS--By the end of October, the people in Hainan have produced 3,973 dun of rubber, an increase of 29 percent over the corresponding period of 1978. Output of tea and other crops also increased by varying degrees. The areas sown to the tropical crops including rubber, cashew nuts and coffee were 165,000 mu, fulfilling the sowing plans of this year by 30 percent. This year, the production, supply and marketing of rubber were managed by the Hainan Tropical Crops Bureau, increasing the quantity of purchasing. The chemical fertilizer, machinery and transport equipment were also comparatively more sufficient, effectively promoting the development of rubber production. [Haikou Hainan Island Service in Mandarin 1100 GMT 11 Dec 79 HK]

CSO: 4007

'GUIZHOU RIBAO' URGES LAYING SOLID FOUNDATION FOR AGRICULTURE

HK240937 Guiyang Guizhou Provincial Service in Mandarin 2315 GMT 22 Dec 79 HK

[Report on GUIZHOU RIBAO 23 December editorial: "Lay Solid Foundation for a Bumper Agricultural Harvest Next Year"]

[Excerpts] The editorial said: To successfully readjust agriculture and to reap a comprehensive bumper agricultural harvest, we now must further organize our cadres and people to conscientiously study Comrade Ye Jianying's National Day speech and the central authorities' resolution on several issues concerning quickening the pace of developing agriculture, sum up experiences and lessons, affirm achievements, correct shortcomings and mistakes, uphold the four basic principles, eradicate interference from the left and right, merge our thinking with the spirit of the third plenum of the party Central Committee and truly concentrate your leadership energies on agricultural production.

Practice in the past year has proven that the change from a single-product economy to a diversified economy is a correct principle of increasing output and reaping bumper harvest.

The editorial noted: The key to reaping a comprehensive bumper agricultural harvest next year lies in depending on the party's policies to mobilize the enthusiasm of the masses of people. Therefore, we must continue to implement the rural economic policies.

We must concentrate our forces to grasp the management work in communes and brigades and particularly labor management. We must also grasp the popularization of science and technology. If we fail to promote this work, we will not be able to promote agriculture. We must train all rural basic-level cadres prior to the busy spring plowing season, enhance the masses of cadres' understanding of policies, raise their management level and give them a free hand in work. Only by doing so can we have a solid foundation for reaping a comprehensive and bigger agricultural bumper harvest.

CSO: 4007

UNUSUALLY COLD WEATHER HITS PEKING AREA

Hong Kong TA KUNG BAO in Chinese 18 Nov 79 p 1

[Article: "Severe Cold Rarely Seen In 30 Years Invades Peking"]

[Text] New China Agency, Peking, 17 Nov--In the past few days, the weather in the Peking area suddenly turned cold and the temperature reached a low of -9 degrees Celsius.

A bitterly cold air mass blowing down from Siberia has invaded a vast area of this country from Dongbei to Huadong. The cold air mass dropped in suddenly and its attack continued; thus, abnormally cold weather for an early winter appeared in many areas in the northern part of this country.

In the Peking area, the daily average temperature plunged from 12 degrees Celsius above zero to five degrees below zero during the attack of this cold wave. Such a large temperature drop has rarely been seen in the past 30 years.

During the course of continued drop in temperature, the greatest drop was registered in the Dongbei area with a temperature drop in excess of 20 degrees. For example, the temperature drop at Changchun reached as much as 29 degrees, the daily average temperature dropping from 10 degrees above zero to 19 degrees below zero, with a low of 22 degrees below zero. Other areas such as Henan, Shandong, Hubei, Hunan, Jiangsu, Anhui, Zhejiang, and Shanghai have also experienced a temperature drop of 10 degrees or so in general.

Because of a timely forecast of the cold wave and the temperature drop made by the Central Meteorological Station, many areas were able to prepare and take appropriate measures to resist the cold attack. Nevertheless, a small number of vegetable and wheat fields in the suburbs of Peking were damaged by the freezing temperatures. The concerned leading departments have already met and studied the situation and have also made arrangements to carry out measures to protect young wheat from cold over the winter.

9113
CSO: 4007

HEBEI MEETING DISCUSSES DROUGHT SITUATION

HK310459 Shijiazhuang Hebei Provincial Service in Mandarin 0430 GMT 18 Dec 79 HK

[Summary] The Hebei Provincial Revolutionary Committee held a meeting of special commissioners of the prefectural administrative offices from 15 to 17 December, which called on the province to fight a successful battle to overcome the drought and insure a good summer harvest and successful spring sowing. Wang Jinshan, Guo Zhi, Lu Yulan, Yang Zejiang, (Li Yongxin), Hong Yi, (Li Feng) and (Ding Tiexin), responsible comrades of the provincial CCP and revolutionary committees, were present at the meeting. Wang Jinshan and Yang Zejiang made speeches.

The meeting pointed out: The province has had little rain since the summer and autumn, and this year's rainfall has been the lowest in the province since liberation. The province has waged a stubborn struggle against the drought and reaped a relatively all-round bumper harvest. It is estimated that total grain output may surpass that of 1978, while cotton production may rise by 8 percent and output of oil-bearing crops by 23 percent. The province has sown 39,560,000 mu of wheat, of which 28 million mu have been irrigated, some 13 million mu have been irrigated twice. "However, the drought is continuing to develop and the amount of surface water has been greatly reduced. Rivers and streams have dried up in many places, and many mechanically-operated wells have no water to pump. Due to the severity of the drought, there is not enough soil moisture in the wheat fields. In addition, cold weather came early this year. As a result the growth and earing of wheat has been greatly affected. The layer of dry soil is very deep over most of the farmland. On some dry land which has not been irrigated, moisture is only found after digging one or two feet. Unless measures for fighting drought are firmly grasped, there is the danger that spring planting will be impossible."

The provincial revolutionary committee demanded that the party, government army and people in the province mobilize to fight a major action against drought. It is necessary to do well in managing and using water and make great efforts to tap underground waters. The province must get a good grasp of implementing the two central documents on agriculture in connection with fighting drought. "We must teach the peasants to maintain the socialist orientation. Love the collective, obey the leadership, observe labor discipline and oppose anarchism and extreme individualism."

The conference demanded that party and revolutionary committees at all levels grasp fighting drought and promoting farmwork as a prominent central task. Leaders must get to the frontline to direct the battle. "Prefectures and counties where the drought is serious must set up antidrought command organs."

CSO: 4007

RECORD YIELD EXPECTED IN TIANJIN MUNICIPALITY

Tianjin TIANJIN RIBAO in Chinese 22 Sep 79 p 1

[Article by Xiao Di [5135 4564] and Chen Zhonghuai [7115 6945 2849]

[Text] The spirit of the Third Plenary Session of the 11th CCP Central Committee has brought about fruitful results in the countryside of Tianjin Municipality. After a record total output and per-unit yield were won from some 3 million mu of summer crops, a bumper harvest is again expected from 6 million mu of autumn crops. At present, the spring-sown crops of corn, kaoliang and millet are being reaped for drying, the paddy-rice crop is growing well, the bumper harvest of intermediate and late sown crops is in sight, the acreage of minor miscellaneous grains and oil-bearing crops is larger than that of last year, and an autumn bumper harvest is basically certain. It is anticipated that the total output of the whole year will reach or surpass the highest record of the past. Our one million peasants are plunging into a heated battle of "autumn harvest, plowing and sowing" work.

This year, following the implementation of the spirit of the Third Plenary Session of the 11th CCP Central Committee, the party committees of all levels intensified their leadership over autumn grain production. Early in November last year, the party committee of our municipality called a conference to exchange experiences in corn production, and carefully summed up past experiences and lessons drawn. In the course of arranging plans of cultivation, all party committees laid stress on acting according to local conditions, seeking truth from facts and respecting the decision-making rights of the production teams, thus fixing the acreage for sowing corn and reducing the acreage for sowing hybrid kaoliang. All communes and production brigades and teams made careful plans for the arrangement of land, the application of organic fertilizer and the management of the labor force. In the suburbs, the county authorities also systematically set up the high-yielding plots, experimental fields and commanding fields. As regards the form of planting, all localities criticized the blind command given by Lin Biao and the "gang of four" in past years, focused attention on increasing grain production, refrained from playing games and taking arbitrary measures, acted according to objective laws, respected the farming habits of the masses and gained fine results. At present, more than 1.4 million mu of spring-sown corn and kaoliang are being harvested. From inspection, it is found that the current crop of corn has few borers, the damage by diseases is slight, and the grains are full and plump.

This year, all localities in the municipality, based on the principles put down by the municipal party committee "to act according to local conditions, prepare their own water sources and make rational arrangements," positively and steadily restored the production of Xiaozhan rice. About a million mu of this paddy were sown. Thanks to the adequate rainfall this year, the broad commune members showed high enthusiasm for the cultivation of rice. During the very brisk summer for the seasonal tasks of harvesting, sowing and field management, all localities tried to accomplish these tasks speedily against time by strengthening labor control, rationally organizing the labor force, enforcing the system of contracting output quotas and implementing the principle of "to each according to his work," and greatly aroused the enthusiasm of the broad commune members. In Ninghe County and other places, the members of communes and brigades in the daytime transplanted rice seedlings and in the evening threshed wheat, so that they had taken care of both wheat harvest and rice transplantation. The technical personnel of agricultural sciences visited the rice areas to teach the technique of paddy-rice cultivation and management and to solve technical problems in rice production. At present, the early rice is ripening and will soon be reaped, while the grains of the late rice crop are being filled. Everywhere appears the scene of a bumper harvest.

The rural economic policies of the party have aroused enthusiasm for production among the peasants. This year, among the 360,000 mu of oil-bearing crops, a good harvest was scored from the summer crop of linseed which was sown over large areas for the first time, and its per-unit yield doubled that of last year. The sown areas in such oil crops as spring-sown peanuts and sesame and late sunflower are all larger than in past years, and the crops are all growing better than before. The commune members said happily: "These fine crops have never been seen in many years!"

Our municipality produces such fine-quality miscellaneous grains as the small red beans and green beans. This year, owing to the implementation of the two documents on agriculture issued by the central authorities, the sown acreage has been expanded, and all the crops are growing well. Furthermore, the local large kaoliang is of fine quality and high cash value. This year, 500,000 mu of land were sown with this crop, and a good harvest is also in sight.

9039
CSO: 4007

BRIEFS

WINTER AFFORESTATION--Hebei Province has carried out winter afforestation since late October. Zhangjiakou and Chengde prefectures alone have afforested 480,000 mu of land. Winter afforestation has also been launched in the east and south as well as in other parts of the Hebei Province. [Shijiazhuang Hebei Provincial Service in Mandarin 1100 GMT 30 Nov 79 SK]

CSO: 4007

MECHANIZATION LIFTS PEASANTS' INCOME

OW240852 Beijing XINHUA in English 0754 GMT 24 Dec 79 OW

[Text] Harbin, 24 Dec (XINHUA)--A report on the living standards of peasants in three counties in Heilongjiang Province, northeast China, shows that farm mechanisation has substantially improved their incomes.

The use of machinery in these sparsely-populated areas means that peasants can sow and harvest bigger crops well within the less than 100 days that are free of frost. The bigger returns mean a bigger investment in machinery. Ploughing, sowing, between-row cultivation, harvesting and grain threshing have been largely mechanised.

On average, able-bodied peasants received between 600 and 800 yuan this year, roughly what a city worker makes. The cost of living in the countryside is considerably lower than it is in the city so, after paying for necessities, the peasants were left with a comfortable surplus. An average family of five can save several hundred yuan a year.

Some areas in China are ahead of other parts of the country in farm mechanization and the three Heilongjiang counties, which have a total population of 110,000 and large tracts of fertile black soil, are among those that have boosted their per capita income through the use of machinery.

In two fo the counties, Aihui and Xunke, per capita income was 250 yuan this year and in the county of Sukwu it was more than 200 yuan. Last year incomes were between 180 and 220 yuan. Domestic sidelines, including pig raising and the collection of mushrooms, brought in an average 40 yuan extra per person.

Peasants' food and clothing bills were about 120 to 150 yuan a year per capita. This is higher than in most parts of the country due to the peasants' higher purchasing power and the cold climate. In the better-off brigades and teams, the peasants' spending on food and clothing accounts for half their annual income.

Many production brigades or teams provide the peasants with free medical care, nursery care, tuition for children and electricity and fuel wood plus free film shows and free grain processing. The peasants see film shows more than once a week and some peasant families subscribe to several journals.

The growing prosperity of the communes has brought about these changes in the three adjacent counties:

--The peasants have become keener in collective farm work. The pay they receive from collective farm work, three yuan or more for a day's work, far exceeds what they are able to earn from private individual undertakings.

--The communes plan to buy more machinery and fertilizer. In Aihui County, 141 tractors and combine harvesters were purchased by the communes this year, the biggest annual increase there in any year, yet the supply still fell short of the demand.

--The purchasing power of the peasants has risen and they are using their savings to buy wrist watches, bicycles, radios and sewing machines.

--The gap between town and countryside is narrowing since the pay of these peasants has reached the level of city workers' earnings. The per capita consumption of meant, vegetable oil and fish is also roughly the same as in the cities.

--The poorer brigades and teams are rapidly catching up with the richer units and the richer units are helping them by lending them capital for investment.

CSO: 4020

FARMERS INCOME, BUYING POWER INCREASING

Hong Kong TA KUNG BAO in China 18 Nov 79 p 3

[Article by Reporters Sun Minghui [1327 6900 1920], Shi Kanli [4258 1030 4350] and Han Zhifei [7281 0037 7236]: "The Policy Which Helped Farmers Get Rich Captured People's Heart; Farmers In Six Counties of Heilongjiang Province Increased Their Income"]

[Text] Allowing farmers to get rich, allowing a certain area, a certain production team or a portion of farmers to get rich is one of the most important steps of accelerating the realization of the Four Modernizations. It is a fundamental measure for improving the relationship between the party and the farmers and for developing the socialist system in the villages. This policy reflects the basic desire of the vast majority of the farmers and the cadres in the basic unit. It has helped liberate production power. This was the deep impression gained by these reporters through their recent visit to the six counties of Aihui, Sunke, Sunwu, Beian, Renjaing and Dedu in the Heihe area of Heilongjiang Province. These areas have already started on the road to prosperity.

Aihui County on the bank of the Heilongjiang River has fertile soil and rich natural resources. During the course of criticizing the extreme leftist roaders, the "gang of four," in 1978, the county eliminated the limitation on distribution, allowing distribution to farmers as much as possible as long as sufficient stockpiles had been built. This raised the enthusiasm of the farmers to produce more and a full harvest has resulted. The average per capita distribution has also increased, reaching 220 yuan. The enthusiasm of the vast majority of the farmers to produce more was further spurred on by the publication of the spirit of the Third Plenary Session of the 11th Party Central Committee and the document related to the Central Government's policy on agricultural development. As a result, a full harvest was achieved in spite of a severe drought, and the diversified operations have seen growth compared with the previous year. Furthermore, since the procurement prices have been raised, the average annual per capita income may surpass 250 yuan.

The situations in the two counties of Sunke and Sunwu neighboring Anhui County have been more or less the same in recent years.

Would allowing farmers to get rich really promote capitalism as the "gang of four" used to emphasize? Much evidence came to the attention of these reporters which proved otherwise. The policy of allowing farmers to get rich has greatly strengthened the socialist system, enabling the production power to be liberated once more since the land reform. For example:

1. The enthusiasm of the commune members of those teams which are rich or relatively rich has never been so high. Since the limitation on distribution was removed, the income from collective labor has far surpassed what extra income one could have earned from extra independent work or from a "little freedom." Many women who heretofore did not participate in collective labor have begun to participate by sending their children to day care centers. Even those retired old folks who could enjoy a quiet life at home have scrambled back to win a place in the labor force.

2. Strong demand by the vast majority of the villages to march forward toward modernization and expanded production has appeared. In the Heihe area, no matter where you go, be it county, commune or production team, you hear the demand for more agricultural machinery and chemical fertilizer made by the cadres as well as the commune members.

3. The richer team helping the poorer team to catch up; the hot tide of competitiveness has already made its appearance.

4. Strong buying power has been achieved in the rich villages. The majority of the farmers are able to buy those commodities of higher quality and higher price such as name brand watches, bicycles, radio receivers, sewing machines, and better stylized furnitures. Some of the commune members can even afford to buy cameras and motorbikes. Many richer commune members of Anhui and Sunke counties told these reporters that they were prepared to buy television sets as soon as a good rebroadcasting station was built in the area.

5. With the appearance of more and more rich production teams, the differences between cities and villages are becoming fewer and fewer. Take Aihui County for example. The life of an average farmer in those richer teams averaging more than 300 yuan income has already surpassed the level of life of a greater majority of workers in the city. Since meat, vegetables and housing need not be bought in the villages, one yuan in the hand of a farmer, as the commune members put it, can go further than two in the hand of a city dweller.

9113
CSO: 4007

BRIEFS

HEILONGJIANG FROZEN PORK--As of 14 December, some 31 million jin of frozen pork were delivered to Heilongjiang Province from various localities inside Shanhaiguan. The province in 1979 purchased 2.5 million pigs to provide an ample meat supply to the rural and industrial areas. Some 4.6 million jin of frozen pork were already delivered to Harbin Municipality, and it is anticipated to reach 12 million jin by the end of this year. [OW221213 Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 14 Dec 79 OW]

SUGAR PRODUCTION--Heilongjiang Province fulfilled 73.85 percent of its annual sugar production plan by the end of November. As of late November, some 1.25 million dun of beets were purchased in Heilongjiang, an increase of 4.2 percent over the corresponding period of 1978. [Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 13 Dec 79 OW]

PREFECTURE SELLS MORE HOGS--By 22 November, Nenjiang Prefecture, Heilongjiang, had overfulfilled the annual hog purchasing plan by 4,000 head, topping last year's target by 100,000 head. In the first half of this year, the number of live pigs in stock throughout the prefecture was 1.72 million head. [Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 4 Dec 79 OW]

CSO: 4007

HENAN ISSUES CIRCULAR ON PROMOTING YEAREND DISTRIBUTION

HK250210 Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 21 Dec 79 HK

[Excerpts from poor reception] The Henan Provincial CCP Committee and the Henan Provincial People's Government issued a directive on 19 December on seriously doing well in promoting people's commune yearend settlement of accounts and distribution work. The directive demanded that the party committees and governments at all levels attach great importance to the work, truly grasp yearend settlement of accounts and distribution work as a major task and insure the realization of distribution.

In the directive, the Henan Provincial CCP Committee and the Henan Provincial People's Government first analyzed the situation in the countryside.

The directive demanded:

1. We must fully mobilize the masses to clear all work points, accounts and materials, and democratically draw up distribution plans. Brigades and production teams must seriously publicize the work points and revenue and expenditure accoutns regarding their agricultural and industrial sideline occupations.

2. We must seriously do well in handling the relationship between accumulation and distribution and do well in promoting the distribution of total revenues. In making yearend settlement of accounts and distribution, we must take into consideration the interests of the state, collectives and individuals and reasonably draw up the (?retention and distribution ratios). Brigades and production teams which have relatively high increases in production and incomes and high procurement levels must both achieve increases in the income of over 90 percent of the commune members and also appropriately retain additional collective accumulation.

3. We must do well in promoting the distribution of food grain to commune members. After fulfilling the state's procurement plans and retaining enough seeds, fodder and productive grain and definite quantities of reserve grain, production teams must both realize the principles of to each according to

his work and more pay for more work in the distribution of food grain while also doing well in making proper arrangements for the livelihood of the commune members and (?promoting planned parenthood).

In the distribution of food grain, problems involving educated youth and planned parenthood should be (?handled) according to the relevant regulations of the Henan Provincial CCP and revolutionary committees. After fulfilling the state's procurement tasks, areas where the production of fats and oil is concentrated may distribute leftover fats and oil with reference to the way they distribute food grain. The prices of food grain distributed to commune members, and the labor subsidy grain and reserve grain retained by the collectives will be calculated according to marketing prices, whereas seed and fodder grain should be calculated according to procurement prices.

4. We must reasonably solve the problems of remunerations to brigade and production team cadres. We must both mobilize the cadres enthusiasm and do well in running the collective economy. We must simultaneously not detach ourselves from the masses but make the relationship between cadres and masses closer. We must continue to implement the system of fixed labor assignment with fixed allowances to principal brigade cadres. The number of cadres receiving allowances in each brigade should be determined according to the scale of the brigade. The number should be generally 3 to 5, with the maximum being 7. For other brigade cadres and production team cadres, we will practice the system of recording work points according to the work they do.

The summation of subsidiary work points given to principal brigade and production team cadres and also the personal labor work points of cadres may generally be 10 to 30 percent higher than the work points for equivalent labor. In the case of the poor work and substandard labor, the summation may be equal to or even less than those for equivalent labor. The actual amounts of allowances given to each cadre should be democratically appraised by meetings of representatives of commune members according to his work attitude, the quality of his work and the amount of his contributions. Those given to production team cadres will be approved by brigades and those given to brigade cadres will be reported to the communes for approval. To encourage cadres to actively do well in promoting their work, we may experiment with brigade and production team cadres by drawing as bonuses a certain percentage of extra profits earned in excess of the net profit quotas.

5. We must actively recall overdrafts and loans.

6. Strengthening leadership is the key link in doing well in promoting yearend settlement of accounts and distribution work. Party committees and government at all levels must grasp yearend settlement of accounts and distribution work as a major task. They must each have a responsible comrade personally taking command. They must organize the forces of agricultural, financial, banking and other concerned departments and concentrate a period of time in assisting the production teams in specifically doing well in promoting the task.

When realizing distribution, mass grand-scale rallies must be held to commend production experts and advanced model figures. We must draw up and publicize next year's plans, do well in informing the people a year ahead, practice the "two basics," implement all production responsibility systems, whip up a new production upsurge and reap an even greater bumper harvest next year.

CSO: 4007

BRIEFS

HENAN PREFECTURE AGRICULTURE SHORTCOMINGS--The Chumadian Prefectural CCP Committee has reviewed the achievements of the prefecture in the past 30 years and has found out the reasons for the prolonged backwardness in their work, despite the tremendous change that has taken place in the prefecture in the past 30 years. Members of the prefectural CCP committee pointed out that the development of production is very uneven: the agricultural water conservancy projects were few in the prefecture and their standards are low. There are many problems in resisting drought and draining waterlogging. The development of agriculture, forestry, animal husbandry, sideline production and fishery is not in fill swing. The 3 million mu of barren hills and 0.5 million mu of water surface areas throughout the prefecture have not been fully used, wasting natural resources. There has not been large-scale transformation in planting. The per-mu yield of grain is less than 400 jin. The reason for this backwardness was due to the 10 years of devastation of the cultural revolution. [Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 15 Nov 79 HK]

HENAN COUNTRY PRODUCTION--Despite serious drought this year, the total grain output of Linxian County, Henan, is expected to reach 620 million jin, increasing by 100 million jin over that of 1976. The average income for each commune member is expected to reach 100 yuan. As of the end of October, some 800 commune- and brigade-run enterprises had achieved total output value of 58 million yuan, a 24 percent increase over that of 1978. [Beijing Domestic Service in Mandarin 2230 GMT 13 Dec 79 OW]

HENAN PREFECTURE CHEMICAL FERTILIZER--From January to October this year, the small nitrogenous fertilizer works in Xinxiang Prefecture have produced 153,000 dun [tons) of synthetic ammonia, earning a profit of 19.73 million yuan. By 20 October, these works overfulfilled the year's output plans for nitrogenous fertilizer after managing the enterprises with economic method. [Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 3 Dec 79 HK]

CSO: 4007

HUBEI

BRIEFS

HUBEI COUNTY AGRICULTURE--The total output of grain in Mianyang County this year is 1,200 million jin, an increase of 100 million jin over last year. Two hundred million jin were delivered to the state. The output of cotton increased by 36.1 percent. Despite a reduction of 40,000 mu of double-cropping rice this year, the total output is 30 million jin higher than last year. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 5 Dec 79 HK]

HUBEI COUNTY COTTON, GRAIN--The total output of grain in Tianmen County this year is 919 million jin, an increase of 20 million jin over last year. A total of 1.03 million dan of ginned cotton were also produced from 780,000 mu with an average per mu yield of 132 jin. By the end of November, 1 million dan of ginned cotton had already been stored. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 5 Dec 79 HK]

HUBEI COUNTY COTTON--The total output of cotton in Xinzhou County this year is 480,000 dan, surpassing the highest level ever recorded. The average per mu yield is 160 jin. The average income of the people in this county this year is 130 yuan, an increase of 23 yuan over last year, while the average food ration for each person is 580 jin. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 5 Dec 79 HK]

HUBEI COUNTY GRAIN--This year, the people in Jianli County have overcome all kinds of natural disasters and increased the output of grain by 40 million jin over last year. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 4 Dec 79 HK]

OIL-BEARING CROPS--The total output of oil-bearing crops in Hubei this year increased by 20 percent over last year. Both the unit and total outputs are higher than the record level. The output of rape this year is 30 percent higher than last year. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 5 Dec 79 HK]

CSO: 4007

CCPCC COMMENDS COUNTY IN HUNAN FOR EDUCATIONAL WORK

OW280201 Beijing XINHUA in English 0145 GMT 28 Dec 79 OW

[Text] Changsha, December 28 (XINHUA)--Taojiang County in Hunan Province central China, has been cited for its good educational work in meeting the needs for modernizing agriculture.

An ordinary county in the hilly areas in central Hunan, Taojiang has a population of 680,000. Agricultural production made slow progress in the early 1970's for lack of educated farm hands. Over one third of the 210,000 adult peasants were illiterate and many children were not receiving primary school education.

This state of affairs was common during the cultural revolution. The situation in Taojiang began to change when the county party leadership realized that it was wrong to neglect education.

By 1972, the county made five-year primary school education universal, since then the rate of school age children attending school has remained around 98 percent. Teachers often go to give lessons to handicapped children or those living in remote areas so that maximum number can complete the five-year elementary schooling. There are now 123,000 children, 83 percent more than in 1970, studying in 685 primary schools all over the county.

This was followed by the popularization of three-year junior middle school in 1975. Now Taojiang has 52,900 middle school students, triple the 1970 figure.

By the end of 1977, Taojiang County had provided 80,000 illiterate adult peasants with two years of literary exercise. It became the first county in the province without a single able-bodied adult illiterate.

Agricultural production has benefitted, by wider use of scientific farming, grain output averaged 7.2 tons per hectare, 60 percent more than 1970. Income has risen 46 percent for the same period.

Taojiang County's success has drawn nation-wide attention. The Central Committee of the C.P.C. in a recent instruction commended the efforts of Taojiang and summed up its main experience in running school as follows:

The county party committee and government have paid special attention to rural education and combined the effort to raise agricultural production with the effort to promote rural education. They recognized scientific farming methods were essential for progress in farm production and therefore took raising the educational level of the peasants as the first step.

With only limited funds available from the state, Taojiang County relied mainly on the peasants and the production brigades for financing. The peasants showed their eagerness to contribute to education for the benefit of their children. During the past three years, the county has built or improved a total of 300,000 square metres of school buildings. The government covered only 16 percent of the cost. The remaining 84 percent was provided by the communes or brigades and by volunteer labour from the teachers and students. Work-study programmes were conducted by some schools.

While placing emphasis on running regular primary schools, Taojiang set up spare-time education and preschool facilities. They organized 241 spare time primary and middle school classes and evening agrotechnical classes for adult peasants. Some 19,000 children at age six were given some elementary lessons in classes in 670 production brigades to prepare them for the first grade of primary school, which starts at age seven.

The Ministry of Education and the Hunan provincial party committee co-sponsored a meeting in Taojiang County in late November which discussed how to carry out the party instruction and spread Taojiang County's experience in running rural schools.

CSO: 4020

BRIEFS

HUNAN RAMIE--By the end of October, the people in Hunan have purchased 185,000 dan of ramie, an increase of 33.62 percent over the corresponding period of last year, fulfilling this year's purchasing plans of ramie 2 months ahead of schedule. The people in Yuanjiang County which is one of the base countries of ramie commodities throughout the nation purchased 130,000 dan this year. [Changsha Hunan Provincial Service in Mandarin 1100 GMT 28 Nov 79 HK]

CSO: 4007

BRIEFS

JIANGSU FIELD MANAGEMENT--Seedlings inspection and replanting are now in full swing in Nantong County, Jiangsu. Seedling replanting has been completed in 190,000 my of wheat fields. Due to adverse weather conditions, nearly 22 percent of the county's wheat fields are in need of replanting. Some 10,000 persons of Nantong County have been mobilized to take part in seedling inspection and replanting. [OW141313 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 8 Dec 79 OW]

AGRICULTURAL LOANS--Since the beginning of this year, the Jiangsu Provincial Bank of Agriculture has improved the system of agricultural loans. As a result, more than 940 million yuan of agricultural loans were granted throughout the province from January to August this year, topping past records and increasing by 72 million yuan over the same 1978 period. The amount of loans recalled reached 631 million yuan, increasing by 191 million yuan over the same 1978 period. As of the end of August, the amount of deposits in rural areas of the province reached 1.06 billion yuan, increasing by 320 million yuan over the same 1978 period. [OW252203 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 20 Nov 79 OW]

TOP GRAIN-PRODUCER--Nanjing, December 22 (XINHUA)--Formerly poor and low-yielding Xinghua County in East China reaped 925,000 tons of grain this year, surpassing Yushu County in northeast China to rank first in grain output of all the over 2,000 counties in China. The county's 1979 output was 85,000 tons more than in 1978, the previous highest year. Xinghua County, situated in an area in northern Jiangsu Province lower than all the surrounding land, is described as "the bottom of a cooking pot". The county was ravaged by disastrous floods and waterlogging plus drought in the dry seasons in the centuries before 1949. The large-scale water control project built in the past three decades, including a vast network of canals, ditches, sluice gates and pumping stations, have in the main eliminated flooding and greatly alleviated the menace of waterlogging and drought. The county's present annual grain output is more than six times that in the early period after liberation. The county had delivered and sold to the state 355,000 tons of grain up to December 7 this year. The county also chalked up record outputs of cotton, oil seed, pigs and eggs this year. [Text] [OW220858 Beijing XINHUA in English 0829 GMT 22 Dec 79 OW]

JIANGSU COUNTY REPLANTS SEEDLINGS--In view of the drought which hindered the emergence of seedlings, Tongshan County, Jiangsu, has mobilized the masses to replant seedlings of wheat, barley and naked barley on more than 160,000 mu of land. The survival rate of replanted seedlings has exceeded 80 percent. [Janjing Jiangsu Provincial Service in Mandarin 2300 GMT 3 Dec 79 OW]

CSO: 4007

BRIEFS

JIANGXI COUNTY RICE--The peasants in Huichang County have increased the output of mid-season rice by 7 million jin this year after reaping a bumper harvest of early rice, an increase of 91.8 percent over last year. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 3 Dec 79 HK]

CSO: 4007

BRIEFS

AGRICULTURAL PRODUCTION--Agricultural production has increased steadily this year in Yushu County, Jilin Province. Combined total of grain and soybean production amounts to 1.8 billion jin. Some 800 million jin of commercial grain have been sold to the state. Per capita income is 15 percent higher this year than last year. [Changchun Jilin Provincial Service in Mandarin 1100 GMT 29 Nov 79 SK]

CSO: 4007

BRIEFS

ELECTRIC SPRINKLER--A circular electric sprinkler has been produced on a trial basis in the Anshan farm machinery plant in Liaoning Province. It has a water pipe of 421 meters long and automatic controls the amount of water used. It can be used in plains, hilly areas, farmland and pastoral areas. It can be used as a sprayer of herbicide, pesticide and chemical fertilizer. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 10 Dec 79]

COMMUNE INCOME--This year the income of basic accounting units of rural communes in Liaoning Province totals 4.9 billion yuan, showing a 9.6 percent increase over last year. The total distribution to commune members is 14 percent more than last year. The per capita income averages 103 yuan, surpassing last year's figure by 12.28 yuan. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 15 Nov 79 SK]

AGRICULTURAL SCIENCE FORUM--Liaoning Province held an agricultural science forum on 20 December at Fuxin Mongolian Autonomous County to discuss the issue of production in northwest Liaoning. Attending the forum were representatives from the various academic societies of livestock, forestry, water conservation, animal husbandry and grains, as well as experts, professors, scientific and technical workers and responsible comrades of the local counties' leading organs, totaling more than 160 0349 [as printed] Discussion at the forum was centered on the issue of how to build up a base in the five counties of Fuxin, Kangping, Jianping and Zhangwu, which are mainly engaged in beef production. [SK270222 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 23 Dec 79 SK]

CSO: 4007

READJUSTMENT IMPROVES CHEMICAL FERTILIZER PLANT

Production Increased

Hohhot NEI MONGGOL RIBAO in Chinese 4 Oct 79 p 1

[Article by Nei Monggol Chemical Engineering Bureau, correspondent of this paper: "With One Action, the Tu-you-qi Chemical Fertilizer Plant Has Reversed Losses. Cost of Coal Consumption at the Tu-zuo-qi Chemical Fertilizer Plant Has Dropped Sharply"]

[Text] Dispatch from Sa-la-qi [transliteration]--The Tu-you-qi [transliteration] Chemical Fertilizer Plant is conscientiously implementing the policy of national economic readjustment, taking Tongxiang as a model, grasping firmly enterprise reorganization, and developing in depth a drive to increase production and practice economy. During the past 8 months output has risen dramatically, consumption and costs have dropped sharply, and the long-term deficit state has been reversed at one stroke.

The plant produced a total of 1,463 tons of chemical fertilizer during August, with its average daily production exceeding designed capacity by one-fourth. Consumption of the two types of coal used in producing synthetic ammonia was reduced to 2.22 tons, an amount 44.75 percent lower than that for last year, which constitutes achievement of an advanced national standard. The cost of producing chemical fertilizer was 147.7 yuan per ton, 141 yuan lower than last year's cost, a 49-percent reduction. Profits for the month were 47,000 yuan, a figure which has set an excellent example for making up deficits and increasing surpluses for the region's small nitrogenous fertilizer industry.

The Tu-you-qi Chemical Fertilizer Plant was built in 1977. From the time it went into operation until it was forced to suspend production in late March of this year, the plant amassed a deficit of more than 1,6 million yuan as a result of poor management, overconsumption, and high costs. Production was resumed in August after 4 months of intense reorganization. During the reorganization period, the entire staff and all the workers in the general party branch organization at the plant undertook a thorough study of documents produced at the stet of the CCP Central Committee, reached a correct understanding of the great significance of readjustment of the national economy, and overcame the negative feeling that reorganization means discontinuance. At the same time, plant organizational personnel went to the Tongxiang Chemical Fertilizer Plant in Zhejiang to study the nation's most advanced chemical fertilizer production unit, a visit which helped them break with the mistaken idea that deficits are hard to avoid. Contrasting the situation at Tongxiang, the staff and workers said, "Nei Monggol has coal and electricity, and conditions in our region are better than those in Zhejiang, so if we can't do better, the cause is not objective but subjective." The plant leadership took the initiative by declaring that "no wages will be drawn if the production cost of chemical fertilizer is not reduced to a figure below 180 yuan." As a result, an upsurge in which increasing production and practicing economy were taken as the key in reorganizing the enterprise took shape very rapidly.

The plant thoroughly reorganized leading groups at all levels, and strengthened the front line in the workshops with cadres who have great drive and high professional standards. An overhaul of facilities, governed by high standards and strict requirements, was launched. Equipment was tested and scrupulously checked in detail before acceptance. The successful completion of the overhaul task made possible a more conscious use of economic methods of enterprise management. The plant's experiment with the practice of awarding bonuses financed by deductions from profits to staff and workers has given further expression to the principle of more rewards for more work, and more firmly united the interests of the nation, the enterprise, and the individual staff members and workers. The plant has implemented business accounting for plant departments, the workshops, and teams and groups, covering daily figures in four areas: output, quality consumption, and cost; the award fund is calculated on the basis of costs. On this basis, the plant as a whole has developed a labor competition centered on cost reduction. By taking the initiatives of mixing slag and returning the current month's unused materials to the warehouse, the workers have reduced workshop outlays by more than 9,000 yuan.

Coal yard management has been tightened, and confusion at the coal yard has been eliminated. Coal destined for the yard and coal destined for the furnace must both be weighed upon delivery now.

Vigorous pursuit of activities aimed at innovation, transformation, and tapping potential, with the focus on the recovery and utilization of thermal energy and waste gas, produced more than 20 assorted small reforms during the overhaul.

While developing in depth the movement to increase production and practice economy, the plant has also paid attention to improving the lives of the staff and workers. Earnest efforts have been, and are being, made to do a better job of operating the dining hall, nursery, barbershop, bathhouse, snack shop, movies, vegetable supply, and other welfare matters. The plant is also making proper arrangements to find jobs for unemployed children of its staff members and workers, and relieve problems that they might have at home so that they may work wholeheartedly and energetically for socialism.

Cost Decreased

Hohhot NEI MONGGOL RIBAO in Chinese 4 Oct 79 p 1

[Text] [By our Reporter] Our reporter has learned from the Nei Monggol Chemical Industry Bureau that since the Tu-zuo-qi [transliteration] Chemical Fertilizer Plant formally resumed production in September following a 5-month halt for reorganization, large decreases in consumption of the two types of coal used as raw material needed for making synthetic ammonia and in the cost of producing chemical fertilizer, have been achieved, a heartening accomplishment.

During the period from 1 to 13 September the plant's consumption of these two kinds of coal dropped from 5.26 tons for a comparable period of the first quarter to 2.74 tons, a 47.9 percent reduction. Electricity consumption fell 57 kwh from the first quarter's 1,889 kwh, a 3 percent decrease. The cost of producing fertilizer dropped from a first quarter figure of 247.8 yuan per ton to 150.03 yuan per ton, a 39.5 percent reduction. The entire staff and all the workers at the plant are currently in the process of achieving even better results in production, and are continuing the heroic struggle to make up deficits and increase surpluses.

The management situation in the past at the Tu-zuo-qi Chemical Fertilizer Plant was much the same as that at the Tu-you-qi Chemical Fertilizer Plant, and the methods used in carrying out reorganization at these two plants during this recent period were basically identical.

9292
CSO: 4007

FIRST CLASS OF AGRICULTURAL, ANIMAL HUSBANDRY SCHOOL CONCLUDED

Hohhot NEI MONGGOL RIBAO in Chinese 5 Oct 79 p 1

[Article: "Scientific Knowledge Acquired Through Study of Animal Husbandry and Meteorology Raises Level of Professional Management"]

[Text] Dispatch from Hohhot--The first animal husbandry and meteorology class of the Nei Monggol Agricultural and Animal Husbandry Cadre School has satisfactorily completed its 3-month study mission. The students wound up their studies successfully in the middle of September. Comrade Jie-er-ge-le [STC 0267 1422 2706 0519], assistant secretary of the autonomous region's party committee and secretary of the agricultural committee's party committee, participated in the graduation ceremony and gave an address.

This first training class formally began on 16 June this year. The majority of the 250 plus students participating were leading cadres in charge of animal husbandry work in various banners, counties and communes in our region. A minority were scientific and technical personnel engaged in livestock farming and meteorology. Among the student body were 157 Monggols, who constituted 61 percent of the total number of students.

During the 3-month period the students in the animal husbandry class heard Comrade Peng Mengyu [STC 1756 1125 1662], vice chairman of the autonomous region's revolutionary committee, give reports concerning the excellent situation currently prevailing on the livestock farming front, and on general and specific policies in animal husbandry. They undertook fairly systematic study of four basic theoretical courses: Animal Husbandry Science, Veterinary Science, Economics of Stock Raising, and Pasture Cultivation and Utilization. The students in the meterology class concentrated on such courses as Meterology in Agriculture and Livestock Farming, Weather and Climate, and Meteorological Observation. The students went through a period of serious and painstaking study, in which they raised their level of leadership, as well as their scientific and technical level. They achieved good results on their final examinations, and the school awarded them diplomas.

During their studies, the students emancipated their minds, heightened their confidence in their ability to achieve the Four Modernizations, and came to look upon the cadre school as being indispensable. After they returned to their posts they resolved to put the scientific and technical knowledge they had learned into practice, to handle matters in accordance with objective economic laws, and do an even better job in our region's animal husbandry and meteorological undertakings.

9292
CSO: 4007

BRIEFS

NEI MONGGOL LIVESTOCK CENTERS--Hohhot, 16 Dec--One of China's major animal husbandry areas, the Inner Mongolia Autonomous Region, plans to set up ten centres for raising sheep, cattle and camels as well as pigs, rabbits and poultry. The areas were chosen because of the favorable natural conditions and local experience in work. Cattle raising will be concentrated in the eastern part of the region. Fine-wool sheep will be grazed on grasslands in the eastern, central and western parts of the region. Inner Mongolia has 86 million hectares of grassland. It began sowing good strains of grass by plane this year. The region now has 40 million head of animals in stock, a 25-percent increase over 1978. [Text] [Beijing XINHUA in English 0803 GMT 16 Dec 79 OW]

SUGARBEET PRODUCTION--It is estimated that Nei Monggol region will procure 480,000 tons of beets this year, which is 20 percent higher than that of last year, and that over 55,000 tons of sugar may be produced during the sugar-making period, from the fourth quarter of 1979 to the first quarter of 1980, increasing 35 percent compared with that of the last sugar-making period. [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 1 Dec 79]

CSO: 4007

BRIEFS

NINGXIA COUNTRY ANIMAL HUSBANDRY--This year Yanchi County, Ningxia, has raised 640,000 head of sheep, topping last year by more than 10 percent. In the past few years, the county has built 420,000 mu of basic pastoral farms, closed more than 500,000 mu of land for the growth of grass, planted 60,000 mu of forage grass and built 250,000 mu of windbreak and sand-fixation forests. The percentage of total plant cover has returned to 70 percent from 40 percent in the past. [Beijing XINHUA Domestic Service in Chinese 0437 GMT 5 Dec 79 OW]

CSO: 4007

BRIEFS

ANIMAL HUSBANDRY SOCIETIES--Animal husbandry and veterinary societies resumed activities in Qinghai Province in the last year. Now, animal husbandry and veterinary societies have been established in the province's six livestock-breeding prefectures; four counties in Haixi Prefecture; and Huzhun, Huangyuan and Huangzhong counties; with a total membership of more than 700. Recently the animal husbandry and veterinary societies in the province held an annual meeting. The meeting received 93 academic papers, and 33 comrades read their study papers at the meeting. [OW231047 Xining Qinghai Provincial Service in Mandarin 1100 GMT 14 Dec 79 OW]

QINGHAI IMPROVED LIVESTOCK--As of the end of 1978, Qinghai Province had 3.1 million head of crossbred sheep, accounting for 44 percent of the total number of sheep in the province. The average crossbred female sheep can yield 2.2 kg of wool. The improved female yak can annually yield more than 1,000 kg of milk. The province has also raised more than 20,000 head of hybrid horses. [Xining Qinghai Provincial Service in Mandarin 1100 GMT 5 Dec 79 OW]

CSO: 4007

BRIEFS

DALI COUNTY COTTON PRODUCTION--By 27 November, the people in Dali County had delivered 187,900 dan of ginned cotton to the state, overfulfilling the year's task of cotton procurement. This county is one of the main cotton-producing counties in Shaanxi. This year, 167,000 mu of farmland were sown to cotton. After overcoming low temperature, and drought, the people in this county have reaped a comparatively better harvest. [Xian Shaanxi Provincial Service in Mandarin 1100 GMT 2 Dec 79 HK]

CSO: 4007

SHANDONG

BRIEFS

IRRIGATION PROJECT--Dingtao County has completed 78 percent of a subsidiary project of the (Hongweihe) River (?gravity irrigation) work in Heze Prefecture, Shandong Province. A total of 30,000 people from 14 communes are engaged in this project. Up to 26 November they had moved 2.53 million cubic meters of earth.[Jinan Shandong Provincial Service in Mandarin 2300 GMT 8 Dec 79]

FRUIT HARVEST--Shandong Province has achieved a rich harvest of fruits this year. Total production has reached a record 3.3 billion jin. [Jinan Shandong Provincial Service in Mandarin 2230 GMT 12 Dec 79 SK]

FARMLAND CAPITAL CONSTRUCTION--Farmland improvement projects in Shandong Province are in full swing. By 4 December in the whole province some 6.57 million people who participated in the projects had completed 28,400 water conservancy works, leveled and plowed some 3.06 million mu of land, sunk 56,500 pump wells and completed all auxiliary works for some 23,000 pump wells. [SK230958 Jinan Shandong Provincial Service in Mandarin 2300 GMT 14 Dec 79 SK]

CSO: 4007

SHANGHAI

BRIEFS

SHANGHAI REDUCES FISH PRICE--As of 15 December, the purchase and retail prices of some aquatic products will be reduced in Shanghai. The prices of certain fish were raised some time ago. Now prices are being reduced based on the masses' opinions and recommendations made by the municipal price monitoring group. The average scope of reduction is 15-20 percent. For example, the retail price of Crucian carp will be reduced from 84 to 56 fen per jin; variegated carp, from 48 to 42 fen per jin; silver carp, from 44 to 38 fen per jin. [OW222245 Shanghai City Service in Mandarin 1130 GMT 14 Dec 79 OW]

AGRICULTURAL FORUM--The agricultural modernization forum jointly sponsored by some 20 societies in Shanghai in the fields of agriculture, animal husbandry, crop protection and agricultural machinery has been in session for more than 2 months since its opening on 20 September. Over 400 agricultural scientists, professors and specialists have taken part in discussions. Many good suggestions on modernization of agriculture in suburban Shanghai have been made. The forum has urged simultaneous development of grain, cotton and oilbearing crop production on one hand and animal husbandry, vegetable growing and fish breeding on the other. [OW211539 Shanghai City Service in Mandarin 2300 GMT 12 Dec 79 OW]

COTTON PROCUREMENT--Shanghai had procured 1,656,000 dan of unginned cotton as of 16 December, overfulfilling the state purchase plan by 3.6 percent. The purchase amount averages 116 jin per mu. [Shanghai City Service in Mandarin 1130 GMT 20 Dec 79 OW]

ANIMAL HUSBANDRY MEETING--An academic meeting on pig and chicken raising, which was attended by more than 160 professors, engineers and technicians from various parts of the country, came to a close on 16 December in Jinshan County, Shanghai. In addressing the meeting, Vice Minister of Agricultural Machinery Xiang Nan called for mechanizing pig and chicken raising according to local conditions. Chen Zhonglei, vice chairman of the Shanghai Municipal Revolutionary Committee, made a report on animal husbandry in the suburbs of Shanghai. An American couple, (Yang Dao) and (Han Chun), also attended the meeting. [OW291100 Shanghai City Service in Mandarin 0000 GMT 17 Dec 79 OW]

CSO: 4007

BRIEFS

SICHUAN COUNTRY PROCUREMENT--Chengdu, 4 Dec--After fulfilling this year's state procurement plan for rapeseeds as well as collective reserve quota for rapeseeds, Pixian County of Sichuan Province had some 6 million jin of rapeseeds left. With these rapeseeds, some 2.2 million jin of edible oil was extracted and distributed among commune members according to work done, with quite a few members getting more than 20 jin of edible oil. [Beijing XINHUA Domestic Service in Chinese 0705 GMT 4 Dec 79 OW]

FARMLAND CAPITAL CONSTRUCTION--The SICHUAN RIBAO commentator's article pointed out that since there are fewer farming activities in winter and spring, it is necessary to mobilize labor forces to carry out farmland capital construction during this period in accordance with the principles, policies, tasks and measures put forward by the national and provincial conferences on farmland capital construction held in this summer and on the basis of local conditions. The article said that quite a number of areas have made unremitting effort in this aspect and scored continuous achievements. However, some areas have not firmly grasped this task since their ideological understanding has not caught up with the new situation. In order to do an even better job of farmland capital construction, it is necessary to make overall plans on production and construction in the countryside and persist in adapting to the local conditions in conducting farmland capital construction. In water conservancy, it is necessary to grasp those projects which require less investment, and produce faster and greater results. [HK030813 Chengdu Sichuan Provincial Service in Mandarin 2310 GMT 11 Dec 79 HK]

CSO: 4007

XINJIANG

BRIEFS

MAKING WASTELAND PRODUCTIVE--Urumqi, December 25 (XINHUA)--A land resources team says in a newly-released report that half a million hectares of wasteland in the southern part of the Tarim basin, Xinjiang Uygur Autonomous Region, can be used for farming, forestry and stock raising. Altogether there are nearly 20 million hectares of wasteland in the southern part of the Tarim basin. The team suggests that in reclaiming the half million hectares, which lie in the Yeerqiang River valley, special attention should be paid to protecting the environment, reinforcing the shelter belt that borders the desert and building windbreaks on farmland. The team surveyed a total of 196,000 square kilometres on farmland. The team surveyed a total of 196,000 square kilometres, collating the experience of peasants in fighting drought, winds and the encroachment of sand dunes, and in improving saline-alakaline soil and irrigation. [Text] [OW250441 Beijing XINHUA in English 0255 GMT 25 Dec 79 OW]

AGRICULTURE, FORESTRY SUCCESSES--Urumqi, December 20 (XINHUA)--The Xinjiang Uygur Autonomous Region in northwest China made advances this year in agriculture, animal husbandry, forestry, and other rural sidelines. The region's total 1979 grain output reached 3.85 million tons, nearly four per cent more than in 1978. Output of famous Xinjiang cotton hit a new record of 15,000 tons. Oil-bearing crops, sugar beets, honey, Turpan grapes and Hami melon all registered substantial increases. This is the third successful year for animal husbandry in the region, one of China's major livestock-raising areas. The number of sheep, goats, cattle and other livestock reached 25.3 million, 2.5 per cent more than by the end of 1978. Sheep bearing fine wool or wool suitable for carpet-making also increased in number. Some areas have expanded deer, rabbit and sable-raising industries. Afforestation also made headway. 18,000 hectares of wasteland have been planted with young trees, and 100 million saplings were planted in small groves. New tree belts were put up on the edges of the Taklimakan (Takla Makan) and the Gurbanturggut deserts to ward off the ravages of sand and wind storms. [Text] [OW301600 Beijing XINHUA in English 1548 GMT 30 Dec 79 OW]

XINJIANG YOUTH HARVESTS--The 165 farms and production teams run by over 11,400 educated young people of all nationalities in Xinjiang have harvested 14.7 million jin of grain, 600,000 jin of oil-bearing crops and 64,000 jin of cotton, raised more than 3,000 head of pigs, 9,700 head of sheep, 660 head of cows and more than 2,000 chickens, and earned more than 4.8 million yuan income this year. Recently the Xinjiang Regional CCP Committee's leading body for helping educated young people settle down in the countryside held a regional conference to exchange the experience among the farms and production teams run by educated young people. Representatives of the farms and production teams and responsible persons of departments concerned studied relevant documents and mapped out the 1980 development plan. [Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 16 Dec 79 OW]

CSO: 4007

XIZANG

BRIEFS

XIZANG COUNTRY ANIMAL HUSBANDRY--Lhasa, 13 Dec--From 1967 to 1978, Baqen County in Xizang built 450,000 mu of pastoral farms, planted 807 mu of fodder grass, revamped 2,100 cow sheds. The number of livestock registered in 1978 was 522,000 head and the country's total income that year increased to 3.19 million yuan from 1975's 2.67 million. In 1978, the county sold and delivered to the state 266,000 jin of wool and 170,000 jin of meat. [Beijing XINHUA Domestic Service in Chinese 0324 GMT 13 Dec 79 OW]

CSO: 4007

BRIEFS

ZHEJIANG COUNTY COTTON OUTPUT--Linhai County of Zhejiang Province reaped a bumper harvest from its 60,000 my of cotton. As of the end of November, the average per-mu yield of ginned cotton reached 127 jin, increasing by 33 percent over the same 1978 period. [Hangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 8 Dec 79 OW]

FARMLAND IMPROVEMENT--Fuyang County in Zhejiang has started 954 farmland improvement projects since the beginning of December, with some 90,000 people working daily. From January to November, the county had already leveled 33,000 mu of land, cultivated 110,000 mu of bamboo and tree saplings, improved 25,000 mu of low-yield fields, and built five small hydroelectric power stations. [Hangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 13 Dec 79 OW]

COTTON PRODUCTION--Pujiang County in Zhejiang this year has reaped 954,900 jin of ginned cotton from its 6,105 mu of cotton fields. Average per-mu yield is 156 jin, showing an increase of 16.6 jin over last year's per-mu output. [Hangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 12 Dec 79 OW]

ZHEJIANG COTTON PROCUREMENT--As of 5 December, some 1,207 million dan of ginned cotton were purchased in Zhejiang Province, overfulfilling the 1979 state procurement plan. Among the province's 30 cotton production counties, 10 have overfulfilled the state procurement plan by more than 20 percent. The average per-mu output of Zhejiang's 1.236 million mou of cotton field exceeds the targets stipulated by the national program for agricultural development. [Hangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 14 Dec 79 OW]

ZHEJIANG FARM MACHINERY--Zhejiang Province's farm machinery industry has fulfilled the annual output value plan and annual profit plan 1 month and 2 months ahead of time respectively. Since 1979, the province has turned out more and better major items of farm machinery which are urgently needed in agricultural production and fisheries, including two-wheeled walking tractors, combine harvesters, sprayers, water pumps for agricultural use, complete sets of diesel generators, great boxes, diesel engines for agricultural use, tractor-driven plows, and rubber-wheeled push carts. The province originally planned to produce 12,000 sets of walking tractors in 1979. Be late November 13,806 sets were turned out. [Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 14 Dec 79 OW]

CSO: 4007

II. PUBLICATIONS

TABLE OF CONTENTS OF 'CHINESE JOURNAL OF ZOOLOGY', AUGUST 1979

Beijing DONGWUZUE ZAZHI [CHINESE JOURNAL OF ZOOLOGY] in Chinese No 3, Aug 79 inside front cover

[Text] The Task of Zoology in Ecological System Studies . . . . . .
Xia Wuping [1115 2976 1627], Cinghai Institute of Biology . . . 1

ECOLOGICAL SURVEY STUDIES

Ecologic Surveys of the Capricornis sumatraensis . . . .
Chen Bihui [7115 3880 6540], Biology Department, Anhui Normal University 5

Survey Studies on the Micromys minutus of Jinshatan in Jinjiang of Jiangsu Province . . . .
Huang Wener [7806 2429 0348], Wen Shixin [3306 0013 2450], Huang Zhengyi [7806 2973 0001], and Tang Ziying [0781 1311 5391], of Biology Department, Fudan University; and Zhou Manzhang [0719 3341 4545], of the Shanghai Museum of Natural History 8

Survey Report of the Balaenoptera acutorostrata in the Northern Yellow Sea . . . .
He Xiangen [6320 6343 2704], Dalien Marine and Fishery Products Corporation 11

Preliminary Observations on the Ecology of the Crossoptilon crossoptilon of Tibet . . . .
Jiang Zhihua [3068 1807 5478], Institute of Zoology, Chinese Academy of Sciences 14

Ecology of the Syrmaticus reevesii . . . .
Wu Zhikang [0702 5267 1660], Guizhou Provincial Museum 16

Epidemiologic Survey of Pulmonary Fluke Disease in the [Lake ?] Lunghu Lumber Mill . . . .
Lin Jinxiang [2651 6855 4382], Li Yousong [2621 0645 2646], of Fujian Provincial Institute of Parasitology; and Wu Zhangyu [0702 2874 3810], [Lake ?]Lunghu Lumber Mill, Fujian Province 18

Fishing Industry Research

Fish Harvest Forecasting in Replenishment of Fish and Marine Products Stocks . . . .
Yeh Changchen [6200 2490 5256], and Liu Chuanzhen [0491 0278 2823], of Liaohing Provincial Institute of Ocean and Marine Products 21

Preliminary Explorations on the Effectiveness of Pulp from Crushed Aquatic Plants as Fish Food . . . .
Zhu Xuebao [2612 1331 1405], and Li Yuanshan [2621 0337 0810], Xiamen Marine Products Institute 24

Experimental Use of Boxed Nets to Breed Yellow Croakers in Dams . . . .
Ren Baizhou [0117 4102 3166], Meishan Hydroelectric Station Fishery, Anhui Province 28

Explorations into the Biologic Principle of Boxed-Net Fish Breeding and Its Application in Production . . . .
Hu Baotung [5170 0202 0681], Changjiang Marine Products Institute 31

A Mathematical Model of Change in Marine Resource Availability . . .
Li Xuedu [2621 7185 3256], Huang Hai (Yellow Sea) Marine Products Institute 33

A Method for Sex Differentiation of the Siniperca chuatsi . . . .
Li Junmin [2621 7486 3787], Chen Chaoshun [7115 2600 7311], Zhao Guangrong [6392 0342 2837], and Zheng Shuangxi [6774 7175 0823], of Tienmen County Institute of Marine Products, Hubei Province 34

Use of First-to-Second Instar Cristaria Plicata to Produce High-Quality Pearls with No Nuclei . . . .
Xie Bingwen [6200 4426 2429], Suzhou Regional Aquatic Products Institute 35

Animal Utilization and Disease Prevention

Exploration into Birds as Natural Predators of Dendrolimns punctatus . . . .
Ding Wenning [0002 2429 1380], Institute of Zoology, Chinese Academy of Sciences 37

Incidence of Oedothorax insecticeps and Eriogonidum graminicolum and Determination of Their Drug Resistance . . . .
Bio-protection Section, Department of Plant Conservation, Southwestern (Xinan) College of Agriculture 40

Studies on the Use of Thyroid Stimulating Hormone (TSH) to Increase Lactation in Marten Dams to Improve the Survival of Young Martens . . . .
You Yuanying [3266 3293 5391], and Dong Minghui [5516 2494 6540], of Endocrine Laboratory, Institute of Zoology, Chinese Academy of Sciences 43

Clinical Uses of Snakes . . . .
Lin Ganliang [2651 0051 5328], and Jin Yilang [6855 6318 6745], Jejiang College of Traditional Chinese Medicine 44

Sex Attractant Function of Preputial Gland Secretions from the Female White Rat . . . .
Liu Bingqian [0491 3521 6197], and Liu Suxia [0491 4790 7209], Institute of Zoology, Chinese Academy of Sciences 49

Control of Common Diseases Seen in the Presbytis francoisi pousargues . . . .
Huang Shitong [7806 0013 0681], Guangdong Provincial Institute of Entomology; and Lai Yuehmei [6351 2588 2734] , Nanning Western Suburban Park 51

Penile Necrosis in Deer Treated by Artificial Urethra . . . .
Liang Youqin [2733 2589 0530], Feng County Deer Breeding Farm No. 1, Jilin Province 53

A Method of "Ten Checks and Two Determinations" in Diagnosis of Deer Diseases . . . .
Jiao Yezhong [3542 2814 1813], Xifeng County Agricultural Bureau Station, Liaoning Province 54

Technics and Methodology

Preparation of Highly Effective Insulin Antibodies . . . .
Liu Zhong [0491 1813], Chen Dingzhong [7115 1353 0022], and Lu Zhi [0712 2784] , Naval Medical Center 55

Comparing Several Chromatographic Technics Used for Adsorption of Poly (A) and Its Connecting Messenger RNA . . . .
Song Dexiu [1345 1795 4423], and Yu Jiankang [0060 1696 1660]. Institute of Zoology, Chinese Academy of Sciences 59

Problem Discussion

Comments After Reading "Anesthesia [Given by Way of ?] Cut Antlers". .
Zhu Benren [2612 2609 0088], Shanghai Western Suburban Park 62

Meeting Report

International Symposium on the Tiger . . . .
Zhu Jing [2612 7231], Institute of Zoology, Chinese
Academy of Sciences 63

Science News

Discovery of a 40,000-year-old Mammoth . . . .
. . . . **Inside back cover**

5292
CSO: 4007

BRIEFS

LIVESTOCK DISEASE BOOK--Beijing, 16 Nov--"Diagnosing Livestock Diseases by Inspection of the Tongue," compiled by the research institute of Henan Province, is now on sale throughout China. This is an effective method developed by veterinarians trained in traditional Chinese medicine. [Text] [Beijing XINHUA in English 0700 GMT 16 Nov 79 OW]

CSO: 4020 END

END OF FICHE

DATE FILMED

29 Jan 80

Jones
D.J.